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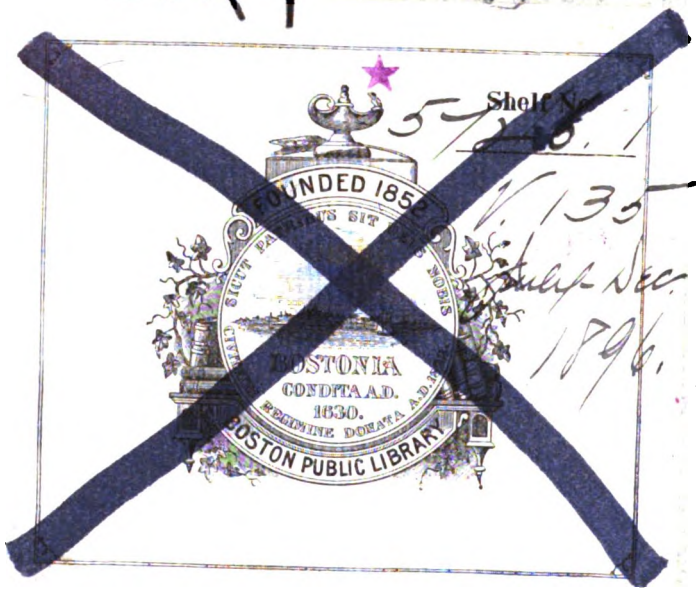
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## Lecture.

### GANGRENE AS A COMPLICATION AND SEQUEL OF THE CONTINUED FEVERS, ESPECIALLY OF TYPHOID.<sup>1</sup>

SHATTUCK LECTURE FOR 1896.

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MR. PRESIDENT and MEMBERS OF THE MASSACHUSETTS STATE MEDICAL SOCIETY:—It is first of all my pleasant duty most cordially to thank you for honoring a stranger by electing him to deliver the Shattuck Lecture for 1896. Yet I am not a stranger in the old Bay State, for I see around me many esteemed former pupils and many men who honor me with their friendship. Even were this not so, do we not all belong to one common guild united by one common impulse, the relief of human suffering and the prolongation of human life—a guild, which, God be thanked, knows no dividing lines of State or nation, creed or color, but all around this goodly earth is marching on, hand clasped in hand in its heavenly mission of healing?

When I received the invitation, in casting about for a subject, it occurred to me that it would be just twenty years since I delivered the fifth Toner Lecture on "The Complications and Sequels of the Continued Fevers," which required a sequel, a sort of "*Vingt ans après*." That lecture for the first time gathered together the many isolated cases reported in the previous thirty years and systematized our knowledge of the surgical relations of typhoid fever. The twenty years that have elapsed since its delivery have rendered some of its pathology quite obsolete, especially by the discovery in 1880 by Eberth of the bacillus of typhoid; but the clinical facts and deductions there set forth are as true to-day as they were then; and that typhoid and other continued fevers have important surgical relations is now well recognized by the profession.

It was my intention at first to consider in this, as in that, lecture all the surgical relations of typhoid; but when my intelligent and industrious friend, Dr. Thompson S. Westcott, of Philadelphia, who kindly consented to tabulate all the recorded cases of such complications and sequels since 1876, brought to me a harvest of between seven and eight hundred cases, I found that it would be quite impossible to review them all within the limits of a single lecture.

These, with the 433 included in the former lecture, make a total of nearly 1,200 cases (besides 352 cases of parotitis not included in the general summary in the first lecture, for they chiefly followed typhus), by far the largest and most complete table ever published. They practically cover the reported cases of the last fifty years.

I would neglect another pleasant privilege as well as duty were I not to acknowledge the repeated courtesy and broadminded liberality of the officers of the Library of the Surgeon-General's Office of the United States Army for the important aid they have rendered me in placing the treasures of their unrivalled collection at my disposal for frequent consultation; without which this extensive tabulation would have been absolutely impossible.

<sup>1</sup> Delivered before the Massachusetts Medical Society, June 9, 1896.

The bone lesions following typhoid have been more or less prominently considered of late, especially by Parsons, of Johns Hopkins, in this country.<sup>2</sup> Gangrene as a complication or sequel, however, is less frequent, and also less well known; and I purpose, therefore, in the present lecture to consider it alone. The many other complications of typhoid I hope to take up in a monograph, which I shall publish hereafter, which will include both my Toner and the present Shattuck lectures, with the tables of all the cases gathered together by Dr. Westcott, with observations and deductions as to their symptoms, pathology and treatment.

English and American authors in the past have not given the attention to gangrene after typhoid which its importance deserves. Thus Reynolds and Bartholow make no allusion to it; Wilson only alludes to gangrene of the lung and the mouth, two of its rarer sequels; Flint mentions it, but had never seen a case; while Murchison in his classical work, and Hutchinson in an excellent chapter on typhoid in "Pepper's System of Medicine" give it only a brief notice. Nor have the surgeons done it any better justice. Neither Gross, Agnew, Ashhurst nor Holmes ("System of Surgery") mention it. Barwell, in the "International Encyclopædia of Surgery," refers to it briefly.

We owe our chief knowledge of the subject to French authors, to a few recent German and American publications. Larrey,<sup>3</sup> Hildebrand,<sup>4</sup> Alibert,<sup>5</sup> and Fabre<sup>6</sup> mention sporadic cases of gangrene; but attention was first seriously called to its occurrence in typhoid fever in 1857 by Bourgeois<sup>7</sup> and Bourguet.<sup>8</sup> The next papers of any importance were by Gigon in 1861 and 1863.<sup>9</sup> The former established the fact of gangrene from arterial obstruction by autopsy, though he regarded the gangrene as a coincidence rather than a consequence of the fever. In 1863, Patry<sup>10</sup> confirmed these earlier observations. The cases reported by these authors were included in the summary published in the Toner Lecture already alluded to.

Since my own contribution, some of the more important papers are those of Spillman,<sup>11</sup> Gaston David,<sup>12</sup> Barié,<sup>13</sup> Deschamps,<sup>14</sup> Haushalter,<sup>15</sup> Flexner,<sup>16</sup> and Quervain,<sup>17</sup> beside a very large number of individual cases, which have been reported by various authors.

One would suppose *a priori* that gangrene would only follow severe attacks, but so large a number of cases of gangrene have been reported after relatively mild attacks that we must concede the possibility of gangrene in mild cases as well as severe ones. Hence, the watchfulness of the physician should never relax by reason of the fact that the case is running a mild course and that gangrene is an infrequent result of typhoid.

Following the example of my Toner Lecture, Dr. Westcott has included in his table a few cases of ty-

<sup>2</sup> Johns Hopkins Hospital Reports, vol. v, 1895, 417, and Annals of Surgery, November, 1895, 623.

<sup>3</sup> Mém. et Campagnes, iii, 72.

<sup>4</sup> Typhus Contagieux, 1806.

<sup>5</sup> Thèse de Paris, 1838.

<sup>6</sup> Gaz. Méd. de Paris, 1851, 539.

<sup>7</sup> Bull. Soc. Méd. des Hôp., Paris, iii, 311.

<sup>8</sup> Gaz. Heb., 1867, 646.

<sup>9</sup> L'Union Médicale.

<sup>10</sup> Arch. Gén., 1863, i, 129.

<sup>11</sup> Arch. Gén., 1881, 7th s., vi, 150.

<sup>12</sup> La Gangrene Typhoïde, Thèse de Paris, 1883.

<sup>13</sup> Rev. de Méd., 1884, No. 1.

<sup>14</sup> Thèse de Paris, 1886.

<sup>15</sup> Mero. Méd., September 20, 1893, 453.

<sup>16</sup> Johns Hopkins Hospital Reports, November, 1894, 120; and Journal of Pathology and Bacteriology, November, 1894, iii, 202.

<sup>17</sup> Centralbl. f. inner. Med., August 17, 1895.

phus and other continued fevers as well as of typhoid. The vast majority, however, are cases of typhoid, much more so than appears in the statistical numbers, for by "typhus" is often meant "typhus abdominalis," especially in the cases of my first series. The other cases, therefore, do not materially affect the conclusions reached, and any one who desires to do so can separate those of typhoid from the remainder by referring to the table when published. Owing to the great preponderance of typhoid, I have often in the text used the word "typhoid" as a single descriptive word rather than the cumbersome, though more accurate phrase "the continued fevers, especially typhoid."

While gangrene is an important complication or sequel of typhoid, it is fortunately rare, so that most practitioners, even men of vast experience in large hospitals have never seen a case, for example, Flint and Murchison. Hölscher<sup>18</sup> in 2,000 fatal cases of typhoid does not report a single case, though he records 59 cases of thrombosis of the femoral vein, and Bettke<sup>19</sup> in 1,420 cases found only four cases of gangrene, all limited to the toes. In my former lecture I tabulated 43 cases from typhoid and 56 from typhus.<sup>20</sup> Since 1876, Dr. Westcott has found 90 cases of actual gangrene, in addition to which he has tabulated 21 cases of arterial and 48 of venous thrombosis not followed by gangrene. In its infrequency, therefore, it is in marked contrast to the bone lesions, of which he has found 168 cases, all after typhoid, to which from my former lecture are to be added 37 after typhoid and four after typhus, or a total in typhoid alone of 205 cases of bone lesions to 133 of gangrene.

*Date of Onset.*—While gangrene is generally a late complication during the course of the fever, or an early sequel during convalescence, it is never a very late sequel, as is the case in the bone lesions. The latter often do not occur till several weeks, sometimes months and occasionally even years after the attack of fever. This is doubtless due to the fact that the bacilli of typhoid find a favorable nidus in the bones, especially in the marrow, and have been repeatedly demonstrated by stain and culture after six, twelve or eighteen months, and even after so extraordinarily long a period as six and seven years.<sup>21</sup> In addition to this, the slowness of all pathological processes in the hard osseous tissues, as contrasted with their rapidity in the soft parts, would naturally lead us to expect that gangrene would occur far earlier than lesions in the osseous tissues.

The earliest time at which gangrene occurred, I find is on the fourteenth day and the latest in the seventh week. By far the commonest time for this dangerous complication to appear is the second and third weeks, during which 39.2 per cent. of all the cases occurred.

The causes for the appearance of gangrene in the second or third weeks, or later rather than early in the disease, are probably twofold. First, during the earlier stages of the disease, the general vitality of the patient and the resistance of the tissues are such that they can combat successfully the evil tendencies of the fever;

but, secondly and chiefly, just as for the production of the intestinal lesions, so for the gangrene, a certain length of time is required for the diffusion of the bacilli and their toxic products, and for their resulting evil effects. Both causes unite in working together and to the same end. By the second or the third week, the bacilli and their toxic products have become diffused through the system; excessive feebleness has followed the small amount of food taken and the exhaustion from the continued high temperature;<sup>22</sup> the heart has become weakened and favors the formation of thrombi, not only in the heart, but also in the vessels, either as a result of arteritis or of autochthonous thrombosis; emboli frequently result; and with the sluggish circulation, the general enfeeblement both of mind and body and the frequently obstructed vessels, the advent of gangrene at this period of the fever should occasion no surprise. Indeed, the surprise is rather that it is so rare.

Let us now consider the pathology, symptomatology and treatment.

#### I. PATHOLOGY.

Various writers have been the partisans of one or another single cause for the occurrence of gangrene during and after typhoid fever. This seems to me an error, for, as I hope to show, there are a number of causes, of which one will exist in one case and another in another case; sometimes singly, sometimes in combination.

In my former lecture, I was disposed to regard the causes of gangrene as chiefly three: first, the altered blood; secondly, the weakened heart; and, thirdly, the mechanical difficulties in carrying on the circulation, especially in distant parts; and that all of these caused the gangrene by the production of thrombi either macro- or micro-scopic. Since that lecture was delivered, however, the bacillus of typhoid has been discovered, and has been proved by a very few careful examinations to play an important, and in some cases at least, a direct rôle in the production of gangrene. It is greatly to be regretted that but very few cases have been studied with the scientific precision which they deserve. By calling renewed attention to the subject, however, I hope to stimulate others, especially in this country, to make thorough bacteriological examinations in the future. All the more are such careful examinations necessary, since the opportunities to make them are so rare and when they do occur it is only too seldom that they fall into the hands of men with the opportunities and capabilities for making such examinations.

The parts which should especially be examined bacteriologically are, first, the endocardium; secondly, the endocardial clots; thirdly, the walls of the arteries and of the veins at the point where they are obstructed by thrombi or emboli; fourthly, the thrombi or emboli themselves; fifthly, the perivascular tissues in the same neighborhood; and, finally, if there are no visible coagula, then the gangrenous tissues themselves should be examined.

In two cases in my table, ergot had been freely given in consequence of hemorrhage. Were these the

<sup>18</sup> Münch. med. Woch., 1891, xxxviii, 43.

<sup>19</sup> Inaug. Diss., Basel, 1870.

<sup>20</sup> Thirty-four of these after typhus were reported by Estlander (Langenbeck's Archiv, 1870, p. 453), in a frightful epidemic following a financial crisis and a series of bad harvests in 1862-67 in Finland.

<sup>21</sup> Sultan: Deutsch. med. Woch., 1894, 675. Buschke: Fortschritte d. Med., 1894, 573.

<sup>22</sup> We do not appreciate how much a continued high temperature alone exhausts a patient. Were the body composed of water alone to raise the temperature of a person weighing 150 pounds from 98.5° to 103.5°, that is, five degrees, to say nothing of the expenditure of force needful to keep it there, requires an expenditure of force equal to raising 285 tons one foot (150×5×772 foot pounds). A girl of 100 pounds weight, simply lying still in bed and suffering from such a fever does daily the work of two or three men.



only cases of gangrene, one might suppose that this had had a determining influence, but as gangrene followed in 88 other cases, in none of which was this drug administered, its exhibition must be considered as merely incidental.

As a foundation for our study of the pathology of typhoid gangrene, let me recall a few of the facts which have been demonstrated bacteriologically.

First, not a few cases of typhoid suffer from a mixed infection. This is much more apt to lead, however, to other disorders than gangrene. For example, as I shall show hereafter, there have been a number of cases of tetanus, of erysipelas and of malignant pustule, due, of course, to a mixed infection of the typhoid and these specific bacteria. In addition to that, the large number of cases of suppurative disorders in various organs, bones, spleen, muscles, etc., presume the presence of the ordinary pyogenic bacteria, and their presence has been proved by stain and culture. In two cases in my table, pyemia or septicemia, a rare condition, is noted. One by Wagner<sup>23</sup> commenced with a crural phlebitis relatively early in the disease (the ninth day), death occurring from pyemia on the eighteenth day. In another reported by Spillman,<sup>24</sup> gangrene of the lips occurred, probably from carious teeth, and the patient died from staphylococcus septicemia, the aureus being found in the spleen, kidneys and liver. They had probably obtained entrance from the mouth. That mixed infection should occur in typhoid fever is not at all remarkable, since the intestinal ulcers and, in a large minority of the cases also, ulceration of the mucous membrane of the mouth, and the bed-sores which are so frequent in typhoid, afford favorable ports of entry.

The researches of Vincent<sup>25</sup> are very noteworthy in this respect, especially as to mixed infection by the streptococcus. In mixed cultures of the bacillus of Eberth and the staphylococcus or the streptococcus, the greatest difference is observed in the influence of these two pyogenic organisms on the bacillus of typhoid. The staphylococcus is remarkably inimical to the growth of the bacillus of typhoid, so that the latter soon disappears, while, on the contrary, when mixed with the streptococcus the typhoid bacillus grows vigorously. In his experimental researches he found that doses of the streptococcus or of the bacillus of typhoid, neither of which was fatal if injected singly, if injected together, would produce the most violent reaction and death.

In 41 cases of typhoid in which various suppurative processes occurred, in 32 the complication was due to the aureus or albus. All of these recovered in spite of extensive suppuration and multiple periostitis. On the other hand, of eight cases in which the streptococcus either alone or associated with the bacillus of Eberth was found, five died, showing a striking difference in the fatality of the mixed infection by these two pyogenic organisms. Sanger<sup>26</sup> also found the streptococcus in the vegetations of typhoid endocarditis.

Turning now to the cases in which bacteriological examinations have shown pure cultures of the bacillus of Eberth, we must note that they may be found (a) in the blood, (b) in the endocardium, (c) in the walls

of the arteries, (d) in the walls of the veins, (e) in the thrombi, and (f) in the perivascular tissues.

(a) Typhoid Bacillus in the Blood. The bacilli of typhoid are most numerous in the blood in the first twelve days of the disease. From then till the end of the third week, they diminish rapidly, and during the fifth and sixth weeks, are only found exceptionally (Park). It is probable that they reach the blood by the lymphatics, since they are found in abundance in the thoracic duct.<sup>27</sup> That they must be distributed by the blood (though so rarely actually found there) is made probable also by the fact that occasionally they are found in multiple organs of the body which could only be reached through the circulation. This is strikingly shown in the remarkably well studied cases of Flexner<sup>28</sup> in which he found them in the mesenteric glands, the spleen, the liver, the bile, the kidneys, the lungs, the marrow of the bone and in the blood in the heart. In the kidneys were a large number of abscesses resembling miliary tubercle, which were, however, proved to be real abscesses containing the bacillus of typhoid in pure culture.

Vincent also, in the paper alluded to, gives details of six cases in which they were found in the blood, the spleen, the liver, the mesenteric glands, the brain, the spinal cord, the cerebro-spinal fluid, the kidneys and the lungs. Moreover, the fact that in several cases they have been found in the fetus proves without possibility of question their transmission by the blood.<sup>29</sup>

(b) In the Endocardium. Viti<sup>30</sup> not only found the bacillus of Eberth in the granulations of endocarditis, but by the injections of the bacillus only into rabbits, he was able to produce endocarditis with vegetations.

Vincent<sup>31</sup> records another case of a soldier who was undoubtedly free from preceding endocarditis, but died from typhoid and in the vegetations on the mitral valve pure cultures of the bacillus of Eberth were found.

Girode<sup>32</sup> made a similar observation. Gilbert and Lion<sup>33</sup> were also able to produce such endocardial vegetations experimentally.

Besides the actual discovery of the bacillus of Eberth in the endocardial vegetations, it is not uncommon to find ante-mortem clots in the cavities of the heart. Forgues,<sup>34</sup> Beaumanoir,<sup>35</sup> Fritz,<sup>36</sup> and Vallette (quoted by Ferrand), have all recorded such post-mortem findings. These clots are formed probably during the period of cardiac weakness, especially in the second and third weeks,<sup>37</sup> and, as the heart begins to regain its force and loses its frequency, are washed into the circulation as emboli. In the viscera their presence is shown by multiple infarcts; in the legs by the occurrence of gangrene.

(c) In the Walls of the Arteries. Ratton <sup>38</sup> reports four cases in which, in section of the arterial tunics,

<sup>27</sup> D hu : Le r le du bacille d'Eberth dans les complications de la fi vre typhoide, Th se de Paris, 1893, p. 59.

<sup>28</sup> Loc. cit.

<sup>29</sup> Freund and Levy : Berl. klin. Woch., 1895, No. 25. Chantemesse and Vidal : Gaz. Hebdom. March 4, 1887, 146. For other references see Flexner's paper.

<sup>30</sup> Atti della R. Accademia dei Fisiocritici di Siena, 4 s., II, fasc. 5, 6, 1890.

<sup>31</sup> Merc. M d. February 17, 1892, 73.

<sup>32</sup> Comptes Rendus Soc. Biol., 1889, 622.

<sup>33</sup> Comptes Rendus, 1889.

<sup>34</sup> R c. de M m. de M d. Militaires, 1880, 3d s., xxxvi, 386.

<sup>35</sup> Prog. M d., 1881, ix, 364.

<sup>36</sup> Charit  Annalen, vi, 169.

<sup>37</sup> Drewitt : Lancet, 1890, II, 1023.

<sup>38</sup> Della Arterite Tifosa in D hu, loc. cit.

<sup>23</sup> Briefly mentioned in the British Medical Journal, 1891, I, 18.

<sup>24</sup> Merc. M d., 1895, No. 13, 145.

<sup>25</sup> Annales de l'Institut Pasteur, 1893, vol. VII, 141.

<sup>26</sup> Deutsch. Med. Woch., 1886, IV.

he was able to obtain pure cultures of the bacillus of typhoid.

(d) In the Walls of the Veins. Haushalter<sup>39</sup> found the bacillus in sections through the veins; and both he and Vaques found the pyogenic microbes in the vein walls in cases of typhoid phlegmasia.

Arteritis, endarteritis and peri-arteritis, phlebitis and periphlebitis have been described by a number of authors, especially Ferrand, Deschamps, Mettler, Barié, Quervain and Haushalter. With the exception of the last two, the descriptions are pathological, but without bacteriological confirmation. Ferrand quotes numerous cases of endarteritis of the iliac, femoral and popliteal arteries followed by thrombosis and gangrene. Barié describes two forms of arteritis; first, an obliterating form, and, secondly, a parietal. In the first there is profound alteration of the middle coat, the muscular fibre cells being infiltrated with embryonic cells, with sclerosis of the external coat and vegetations in the lumen. Sometimes, indeed, the three coats are indistinguishable. In others the lining membrane is covered with small elevations consisting of masses of round and fusiform cells. There is a loss of elasticity in the vascular walls, which become friable and easily distended. The loss of smoothness of the intima, the irregularities of its surface and the diminished calibre from the swelling are readily conceived causes for the formation of thrombi resulting frequently in gangrene. The thrombi at first red, but later decolorized, become adherent to the wall, and finally the artery becomes a solid cord. The secondary thrombosis is slow. The calibre is gradually obliterated, and the gangrene, therefore, is correspondingly slow and not sudden as in embolism; but from the original thrombi secondary emboli may form, and so hasten the gangrene by obliteration of the anastomotic circulation. As a rule, therefore, in arterial thrombosis the gangrene is *dry*, but occasionally during the course of the dry gangrene from arterial obstruction, the vein becomes obstructed and part or all of the limb may fall into sudden ruin from moist gangrene.

The parietal arteritis, according to Barié, is not attended with thrombosis, and is usually followed by recovery.

That arteritis should occur in typhoid is rendered also probable by its appearance in other allied specific diseases, such as small-pox, diphtheria, tuberculosis, syphilis, rheumatism, etc.

How the bacilli reach the walls of an artery or vein is a question. Ordinarily they are not found in the blood; and yet the fact that they may be so widely distributed throughout the body, and that the only reasonable mode of such an extensive diffusion is by the blood, the cases of Flexner, Vincent and others amply prove. Haushalter believes that during their maximum they may reach the vessels by the vasa vasorum,<sup>40</sup> which it must be remembered, especially in the veins, reach the middle and often the internal coat. He is inclined, however, to believe that the process is as follows: that an infection of the pelvic or crural ganglia occurs followed by an infection of the perivenous cellular tissue by retrograde lymphatic circulation. In these cases he supposes that a periphlebitis exists, followed by a secondary endophlebitis precipitating a

thrombus by the ferment furnished by the bacilli. This, I confess, seems to me much less likely than the former view.

(e) In the Thrombi. Both Rattone and Haushalter found the bacillus of typhoid in thrombi. The latter calls attention to the fact that he was not able to stain them in the thrombus, due, he thinks, to the fibrin, which being decolorized with great difficulty, probably obscured the bacilli; but he was able to demonstrate their presence by cultures. He found the endothelium of the veins destroyed. On the surface of the clot next the vein wall a layer of leucocytes was intimately united both to the clot and the wall of the vein. The typhoid bacillus existed only in the thrombosed portion of the vessels; and he is of the opinion that either the bacilli or their products caused the destruction of the endothelium and the resulting clot, and that in all probability in the products of the bacilli was found the ferment necessary to produce the coagulation.

(f) In the Perivascular Tissue. Quervain found the bacillus in pure culture in the pus surrounding the popliteal artery and vein. That the bacillus should exist in the pus and in pure culture ought not now to astonish us.

The pyogenic power of the typhoid bacilli has been very generally doubted in the past; but, as I shall show hereafter in connection especially with the bone lesions of typhoid, the bacilli have been so frequently found in pure culture, in abscesses, periostitis, osteomyelitis and other purulent conditions that we can no longer doubt their occasional pyogenic function. If any additional proof were needed, the experimental researches of Orloff,<sup>41</sup> Colzi,<sup>42</sup> and later especially by Dmochowski and Janowski,<sup>43</sup> and by Flexner in the paper already alluded to, would dispel any lingering doubt. In Flexner's case, having in mind the objections of E. Fraenkel and Baumgarten, and especially the alleged difficulty of distinguishing between the typhoid bacillus and the colon bacillus, and the belief that all of the abscesses asserted to be from the typhoid bacillus were really the results of mixed infection of the typhoid bacillus and the ordinary pyogenic bacteria, special attention was paid to their differentiation. Inasmuch as the commonest pyogenic organism, the staphylococcus, has a greater vitality and is more persistent than the typhoid bacillus (cf. page 8) so that the latter would die out before the former, it is reasonable to conclude that when the typhoid bacilli are found in pure culture in an abscess they must have been its pathological cause.

Why in some conditions the typhoid bacillus should be pyogenic and in others not, we can only at present speculate. No reason can be alleged. But we are precisely in the same position as to the pyogenic function of other bacilli, for example, the colon bacillus, which we certainly know to be a possible, and one might almost say a frequent cause of suppuration in certain conditions, for example, appendicitis, whereas, ordinarily it is an entirely harmless intestinal organism. The care taken by Flexner and Dmochowski and Janowski, Haushalter and Quervain to distinguish the two bacilli by their various stains and different reactions are so manifold that the differentiation of the two may be regarded in these cases as complete.

Having now determined the bacteriological facts,

<sup>39</sup> *Merc. Méd.*, September 20, 1893, 453.

<sup>40</sup> For a number of cases in which bacteria were found in the vasa vasorum see Lockwood's "Traumatic Infection," London, 1896.

<sup>41</sup> *Wratsh*, No. 49, 1889, and Nos. 4, 5 and 6, 1890.

<sup>42</sup> *Lo Sperimentale*, 1890, lxx, 623.

<sup>43</sup> *Zeigler's Beiträge Path. Anat. & Allgemein Pathol.*, 1896, xvii, 221.

let us see how they may be applied pathologically in explaining the causation of gangrene.

The cause of gangrene may be stated in practically a single phrase, obstruction to the circulation. The three factors I have already quoted from my first lecture, the altered blood, the weakened heart and the mechanical difficulties of the circulation in distant parts, especially the last two, still hold good, but there must be added to them, the important rôle of the typhoid bacillus in assisting and often it may be in directly precipitating the coagulation of the blood, which is the cause of the obstruction. Four different varieties of obstruction, therefore, may exist and sometimes co-exist: first, arterial emboli of cardiac origin; secondly, autochthonous thrombi in the arteries; thirdly, autochthonous thrombi in the veins; and, fourthly — probably, though I believe there has been no cases absolutely demonstrated pathologically — thrombi in the peripheral vessels.

(1) Arterial Emboli of Cardiac Origin. This has been observed not only at post-mortems, but clinically. Thus Hayem<sup>44</sup> observed the alterations of the heart two days before gangrene of both legs commenced; the first symptoms being acute pain in the legs with a sensation of cold. The pulsation first in the dorsalis pedis, then in the popliteal, then in the femoral disappeared. Amputation showed that though the arterial walls appeared to be healthy, the femoral artery was partly obstructed by a clot. The obstruction being only partial allowed a feeble circulation to go on. The popliteal and all its branches below the inferior articular were entirely free from any clot. The patient died, and the autopsy showed endocarditis and clots in the heart, the aorta obstructed by a clot extending from its bifurcation to a point above the origin of the inferior mesenteric, but the iliac arteries were entirely free. The spleen and the kidneys presented multiple infarcts. Mercier<sup>45</sup> reports also a case of dry gangrene of both legs with fibrinous clots in both the primitive iliacs, deep femoral and popliteal, the walls of which were healthy, and in the left auricle where there were old fibrinous clots with endocarditis. This form of arterial obstruction is quite common in my table, as will be observed in the *résumé* given later. It leads, as would naturally be supposed, almost always to dry gangrene, because it cuts off the supply of blood, as a rule, absolutely, though in a few cases, as in the one quoted from Hayem, a small amount of blood may still reach the distal parts and so restrict the extent of the gangrene. The very fact also that the walls of the arteries were healthy and that there were multiple infarcts in the viscera, all testify to the cardiac origin of such emboli.

(2) Arterial Thrombosis. In a great number of cases in the table, there were no evidences of preceding cardiac disease, and yet obstructive clots were found in the arteries, and were followed by dry gangrene. These are undoubtedly autochthonous thrombi probably produced largely from the ferment furnished by the bacilli themselves or possibly more frequently from an endarteritis, such as has been already described. The consequences of the thrombosis, as of the embolism of the arteries, will be a greater or less degree of dry gangrene, the extent of which will depend upon the completeness or incompleteness of the obstruction.

(3) Venous Thrombosis. This is much more fre-

quent than the arterial form, probably from the more sluggish circulation in addition to the infectious processes which undoubtedly sometimes cause a phlebitis or a peri-phlebitis. It results in gangrene in a moderate number of cases, but in the majority, as in venous thrombosis from puerperal fever, pneumonia, etc., gangrene is much less apt to follow venous than arterial thrombosis. The circulation is not nearly so completely cut off by venous obstruction as by arterial, since the collateral venous channels are less frequently blocked. Moreover, in arterial obstruction, the limb below the obstruction is entirely deprived of blood, whereas in venous obstruction, the blood is dammed up in the part beyond the obstruction. The circulation may be hindered, but if it be not practically entirely arrested, a feeble nourishment goes on, sufficient at least to prevent gangrene.

It is to be observed that both in venous and arterial thrombosis, especially the latter, the clots are often discontinuous. (See cases of Hayem, Mercier and Beaumanoir.) This possibly may be due to isolated spots of local infection from the bacilli. The venous clots are often very extensive, much more so than the arterial, as shown by a number of cases in my table. Thus, in a case of De Santi,<sup>46</sup> the clot extended downward to the deep femoral vein and upward through the common iliac to the vena cava. Beaumanoir<sup>47</sup> reports not only clots in the arteries of both legs, but also fibrinous clots in the right ventricle and pulmonary artery and its branches, in the left auricle and in the femoral arteries and veins and in the aorta to the level of the first intercostal artery. Naturally such extensive obstruction was followed by gangrene of both lower extremities. Clots extending into the vena cava are also reported by Dumontpallier,<sup>48</sup> Sorel<sup>49</sup> and Bouley.<sup>50</sup>

Occasionally, as would be supposed, venous thrombosis is followed by sudden death, as in a case reported by Nauwerck<sup>51</sup> of thrombosis of the left iliac vein, which was followed by sudden embolism of the pulmonary artery while the patient was at stool, and death in ten minutes, and in another reported by Bourlet,<sup>52</sup> also of thrombosis of the external iliac vein, which extended to the inferior vena cava and the right auricle of the heart, and the patient died from syncope. As would naturally be supposed also, the thrombosis, both arterial and venous, but especially the former, is apt to lead not only frequently to double gangrene, for example, of both lower extremities, but sometimes to a gangrene which is so symmetrical as to remind one of cases of Raynaud's disease.

When the gangrene results from venous obstruction rather than arterial, the gangrene is, as a rule, *moist*. Not uncommonly thrombosis of the arteries and veins is either successive or simultaneous. In either case, the gangrene is apt to be a combination of dry and moist gangrene. Occasionally where the venous thrombosis follows the arterial, the gangrene will be at first of the dry variety in the distal parts and when the venous obstruction occurs, moist gangrene will follow in the proximal.

(4) Thrombosis in the Peripheral Vessels. In addition to the three forms above recited, there are a

<sup>44</sup> Rec. de Mém. de Méd. Militaires, 3d s., vol. xxxv, 1879, 502.

<sup>45</sup> Prog. Méd., 1891, ix, 364.

<sup>46</sup> Comptes Rendus Soc. Biol., 1879, 6th s., vol. iv, pt. 2, 3.

<sup>47</sup> L'Union Méd., 1-82, 3d s., xxxiv, 521.

<sup>48</sup> Prog. Méd., 1880, viii, 998.

<sup>49</sup> Corresp.-blatt Schweizerärzte, 1879, 485.

<sup>50</sup> Prog. Méd., 1880, viii, 988.

<sup>44</sup> Prog. Méd., 1875.

<sup>45</sup> Arch. Gén., 7th s., 1878, vol. ii, 402.

number of cases reported in which the disease began as dry gangrene in the toes and gradually crept up the leg. The persistence of pulsation in the *dorsalis pedis* and other higher arteries showed that there was no arterial thrombosis or embolism in the arteries higher up, but after a time the coagulation, which began in the periphery extended centrally and first the *dorsalis pedis*, then the tibials at the ankle, and later the popliteal and even the femoral were successively obstructed, resulting, of course, in a more widespread gangrene. The symptoms show that none of the three preceding conditions existed, but they enable us by analogy to reach the conclusion that spontaneous thrombi formed in the distal vessels. Whether the cause of this thrombosis is a bacillary infection or not has not been studied with that care which it deserves and no absolute pathological or bacteriological confirmation of this view, I believe, has been reported.

(To be continued.)

### Original Article.

#### THE REPORT OF THE AMERICAN PEDIATRIC SOCIETY'S COLLECTIVE INVESTIGATION INTO THE USE OF ANTITOXIN IN THE TREATMENT OF DIPHTHERIA IN PRIVATE PRACTICE.<sup>1</sup>

THIS subject was chosen by the officers of the Society for its eighth annual meeting, with the belief that a large amount of valuable experience not otherwise available, might in this way be reached and collated. It was also believed that a more trustworthy estimate of the value of the serum treatment of diphtheria might thus be obtained than by statistics taken from hospital practice. There are very few hospitals in America that receive diphtheria patients, and the conditions under which patients are admitted to hospitals and the surroundings while there, are so different from those of private practice, that the measure of success in hospital cases cannot be taken as an index of the results which have been obtained upon this side of the Atlantic with the new treatment.

In order, therefore, to obtain an expression of opinion from American physicians as to the serum treatment, after what had been, with most of them, their first year's experience, a circular letter was prepared and issued by the Committee early in April. This was distributed through the members of the Society as widely as could be done during the time allowed. An attempt was made to reach as many physicians as possible who had had experience with the remedy.

The first surprise of the Committee was in learning how very widely the serum treatment had been employed, especially in the Eastern and mid-Western States. With more time, the number of cases collected might easily have been doubled and perhaps trebled; but enough reports have come in to enable one to see what opinion was held on the 1st of May, 1896, by American physicians who have used this remedy.

The circular letter asked for information upon the following points: Age; previous condition; duration of disease when the first injection was made; the

number of injections; the extent of the membrane—tonsils, nose, pharynx and larynx; whether or not the diagnosis was confirmed by culture; complications or sequelæ, namely, pneumonia, nephritis, sepsis, paralysis; the result; and remarks, including other treatment employed, the preparation of antitoxin used, and general impression drawn from the cases.

Reports were returned from 615 different physicians, with 3,628 cases. Of these, 244 cases have been excluded from our statistical tables. These were cases in which the disease was said to have been confined to the tonsils and the diagnosis not confirmed by culture, and therefore open to question. A few cases were reported in such doubtful terms as to leave the diagnosis uncertain. The figures herewith given are therefore made up from cases in which the diagnosis was confirmed by culture (embracing about two-thirds of the whole number) and others giving pretty clear evidence of diphtheria, either in the fact that they had been contracted from other undoubted cases, or where the membrane had invaded other parts besides the tonsils, such as the palate, pharynx, nose, or larynx. It is possible that among the latter we have admitted some streptococcus cases, but the number of such is certainly very small.

There are left then of these cases, 3,384 for analysis. These have been observed in the practice of 613 physicians from 114 cities and towns, in fifteen different States, the District of Columbia and the Dominion of Canada.

In the general opinion of the reporters the type of diphtheria during the past year has not differed materially from that seen in previous years, so that it has been average diphtheria which has been treated. If there is any difference in the severity of the cases included in these reports from those of average diphtheria, it is that they embrace a rather larger proportion of very bad cases than are usually brought together in statistics. The cases, according to the extent of the membrane, are grouped as follows: In 593 the tonsils alone were involved. In 1,397 the tonsils and pharynx, the tonsils and nose, the pharynx and nose, or all three were affected. In 1,256 cases the larynx was affected either alone or with the tonsils, pharynx, and nose, one or all. In many instances the statement is made by the reporters that the serum was resorted to only when the condition of the patient had become alarmingly worse under ordinary methods of treatment. This is shown by the unusually large number of cases in which injections were made late in the disease. Again, many physicians being as yet in some dread of the unfavorable effects of the serum have hesitated to use it in mild cases and have given it only in those which from the onset gave evidence of being of a severe type. The expense of the serum has unquestionably deterred many from employing it in mild cases. These facts, it is believed, will more than outweigh the bias of any antitoxin enthusiasts by including many mild cases which would have recovered under any treatment. It will, however, be remembered that tonsillar cases not confirmed by culture have not been included.

Only two reports embracing a series of over 100 cases have been received, most of the observers having sent in from five to twenty cases, although there are many reports of single cases, particularly of single fatal ones.

In addition to this material which has come in re-

<sup>1</sup> Reported at the Eighth Annual Meeting held at Montreal, Canada, May 26, 1896.

sponse to the circular, there have been placed at the disposal of the Committee by the courtesy of Dr. H. M. Biggs, 942 cases treated in their homes in the tenements of New York. Of these, 856 were injected by the corps of inspectors of the New York Health Board, upon the request of the attending physician, and 86 others were treated by physicians receiving free antitoxin from the Health Board. In the first group the diagnosis of diphtheria was confirmed by culture in every case, and in all of the latter except 26; in these the diagnosis rested upon extensive membranous deposits or laryngeal invasion. The cases of the New York Health Board were of a more than ordinarily severe type, 485, or more than 50 per cent. of these being reported as being in bad condi-

Of the 4,120 cases injected during the first three days there were 803 deaths—a mortality of 7.3 per cent., including every case returned. If from these we deduct the cases which were moribund at the time of injection, or which died within twenty-four hours, we have 4,018 cases, with a mortality of 4.8 per cent. Behring's original claim, that if cases were injected on the first or second day the mortality would not be 5 per cent., is more than substantiated by these figures. The good results obtained in third-day injections were a great surprise to your Committee. But after three days have passed the mortality rises rapidly, and does not differ materially from ordinary diphtheria statistics. Our figure emphasizes the statement so often made, that relatively little benefit is seen from antitoxin after

TABLE I.—DAY OF INJECTION AND RESULT.

Reports.	Injected on 1st Day.			Injected on 2d Day.			Injected on 3d Day.			Injected on 4th Day.			Injected on 5th Day.			Day of Injection Unknown.			Totals.		
	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.
The Committee's Report . . .	764	38	4.9	1066	89	8.3	620	79	12.7	336	77	22.9	390	152	38.9	215	15	7.0	3384	450	13.0
New York Health Board . . .	126	11	8.7	215	26	12.0	228	37	16.6	153	32	20.9	403	59	29.0	17	4	23.5	942	169	17.8
Chicago Health Board . . .	106	0	0	336	5	1.5	660	18	2.7	269	38	14.1	97	33	34.0	0	0	0	1468	94	6.4
Totals . . . . .	996	49	4.9	1616	120	7.4	1508	134	8.8	758	147	20.7	690	244	35.3	232	19	8.2	5794	713	12.3

tion at the time of injection; to mild cases the inspectors were not often called. Further, an unusually large number of them (38 per cent.) were injected on or after the fourth day of the disease. In 182 of these cases only the tonsils were affected; in 466 the tonsils with the pharynx or nose, the pharynx and nose, or all three; in 294 the larynx was invaded either with or without disease of the tonsils, nose, or pharynx.

Through the courtesy of Dr. Biggs the committee is able to include also a partial report upon 1,468 cases from Chicago, treated in their homes in that city by a corps of inspectors of the Health Department. It was the custom in Chicago to send an inspector to every tenement-house case reported, and to administer the serum unless it was refused by the parents. These cases were therefore treated much earlier and the results were correspondingly better than were obtained in New York, although the serum used was the same in both cities, namely, that of the New York Health Board.

#### THE RESULT AS INFLUENCED BY THE TIME OF INJECTION.

In Table I are given the results obtained in these three different groups of cases, classified accordingly to the day on which they received the first injection of serum antitoxin.

The grand total gives 5,794 cases with 713 deaths, or a mortality of 12.3 per cent., including every case returned; but the reports show that 218 cases were moribund at the time of injection or died within twenty-four hours of the first injection. Should these be excluded there would remain 5,576 cases (in which the serum may be said to have had a chance) with a mortality of 8.8 per cent.

three days; however, it must be said that striking improvement has in some cases been seen even when the serum has been injected as late as the fifth or sixth day. The duration of the disease, therefore, is no contraindication to its use.

#### THE INFLUENCE OF BACTERIOLOGICAL DIAGNOSIS UPON THE STATISTICS.

This is shown in Table II.

TABLE II.

##### DIAGNOSIS CONFIRMED BY BACTERIOLOGICAL EXAMINATION.

Committee's Reports,	2,453 cases; 302 deaths; mortality, 12.3%
N. Y. Board of Health,	916 " 160 " 16.9
Chicago " " "	1,468 " 94 " 6.4
Totals,	4,837 556 11.4
(Excluding 145 cases which were moribund or which died in twenty-four hours) . . . . .	
	8.7

##### DIAGNOSIS FROM CLINICAL EVIDENCE ONLY.

Committee's Reports,	931 cases; 148 deaths; mortality, 15.7
N. Y. Board of Health,	26 " 9 " 34.6
Totals,	957 " 157 " 16.3
(Excluding 72 cases either moribund or dying in twenty-four hours) . . . . .	
	9.6

In the cases in which the diagnosis was not confirmed by a bacteriological examination the mortality is thus 5 per cent. higher than in the bacteriological cases. This difference is to be explained by two facts: first, as already stated, that we have excluded from our reports all tonsillar cases (and hence most of the very mild ones) not confirmed by bacteriological examinations; and secondly, by the fact that this group of cases comprises those treated in the country where physicians have hesitated to use antitoxin unless the type of the disease was a grave one, and where also a large proportion of the injections were made later than in the cities. However, should we leave out the mori-

bund cases, the mortality is but 9.6 per cent., which differs but slightly from the cases confirmed by bacteriological diagnosis.

In our subsequent statistics we shall consider together all the cases bacteriologically confirmed and otherwise, as the statistics are not materially altered by this grouping.

THE RESULTS AS MODIFIED BY THE AGE OF THE PATIENTS.

Unfortunately the ages have not been furnished in the report of the Chicago cases, and we have therefore only the cases reported to the Committee and those from the New York Board of Health for analysis. In Table III are shown the mortality of the different ages grouped separately.

TABLE III.—AGE AND RESULT OF TREATMENT.

Reports.	0 to 2 Years.			2 to 5 Years.			5 to 10 Years.			10 to 15 Years.			15 to 20 Years.			20 Years and over.		
	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.	Cases.	Deaths.	Mortality Per cent.
Committee's Report . .	631	137	21.7	1276	175	13.7	883	106	12.2	276	19	6.8	112	4	3.6	214	9	4.2
New York Health Board, . .	236	65	27.5	466	83	17.8	178	21	11.2	29	0	0	11	0	0	22	0	0
Totals . . . . .	867	202	23.3	1742	258	14.7	1061	129	12.1	305	19	6.2	123	4	3.2	236	9	3.8
Moribund . . . . .	43			59			59			9			0			4		
Mortality, excluding moribund cases, . .			19.2			13.3			8.7			3.3			3.2			2.1

The highest mortality is seen as in all reports to be in the cases under two years, but including all those returned, even those that were moribund when injected, the death-rate was but 23.3 per cent. (21.7 per cent. of the Committee's cases), while if we exclude cases moribund when injected or dying within the first twenty-four hours, it falls to 19.2 per cent.

After the second year there is noticed a steady decline in mortality up to adult life. In many of the reports previously published the statement has been made that no striking improvement in results was observed in adult cases treated by the serum. Our figures strongly contradict this opinion. Of 359 cases over fifteen years old, which were returned, there were but 13 deaths. That the reader may judge for himself how far antitoxin is to be held responsible for the result, a brief summary of these 13 cases is appended.

CASE I. Fifteen years old; injected on the fourth day; membrane covering tonsils and pharynx; profoundly septic, sinking rapidly when injected; died in two hours. "My only death in 17 cases" (Jones, Gloucester, Mass.).

CASE II. Forty-four years old; injected on the fourth day; membrane on the tonsils and pharynx; in bad condition; died three hours after injection. The tonsils had been previously incised, the early diagnosis having been quinsy.

CASE III. Thirty-one years old; injected on the sixth day; membrane on the tonsils, nose, pharynx and larynx; intubation; sepsis; in bad condition; lived eight hours after injection.

CASE IV. Thirty-five years old; injected on the fifth day; membrane on the pharynx and nose (?); in bad condition; septic; died in twelve hours.

CASE V. Sixty years old; in bad condition; had serious mitral regurgitation; injected on the fourth day; membrane covering tonsils, pharynx and larynx; died from heart failure on following day.

CASE VI. Sixty years old; "kidney trouble for years"; injected on the third day; very extensive membrane, covering tonsils, pharynx and nose; profound sepsis; in bad condition; died suddenly on the day after injection.

CASE VII. Seventeen years old; in bad condition, convalescing from measles; enormous adenopathy; profound sepsis; exceedingly high temperature; membrane covering tonsils and nose; injected at the end of forty-eight hours; three injections, temporary improvement after each one; duration of life not given.

CASE VIII. Fifteen years old; in bad condition;

injected on the ninth day; membrane covering tonsils, nose, pharynx and larynx; no operation; enormous infiltration of the tissues of the neck; nephritis; sepsis; lived four days and died of sepsis.

CASE IX. Twenty years old; injected on the third day; membrane upon the tonsils, nose, pharynx and larynx; "a stubborn patient who got up before he was allowed, and died suddenly after it."

CASE X. Twenty-five years old; injected on the fifth day; membrane covering both tonsils, entire pharynx, and completely occluding nose; nephritis and sepsis; throat cleared off entirely; died suddenly on the fourteenth day from cardiac paralysis.

CASE XI. Nineteen years old; injected on the fifth day; membrane upon the tonsils and pharynx; profound sepsis; duration of life unknown.

CASE XII. Twenty-two years old; injected on the fourth day; membrane on the tonsils and gums; sepsis; died on the sixth day.

CASE XIII. The well-known Brooklyn case, reported in 1895. Girl, sixteen years old, who died suddenly ten minutes after injection.

Such are the adult cases which antitoxin failed to cure. Four of them were moribund at the time of injection, no one of them living over twelve hours. Two, both sixty years old, were already crippled by previous organic disease, one of the heart, and the other of the kidneys. In the measles case there was undoubted evidence of streptococcus septicemia. Only two of the cases were injected as early as the third day; three of them on the fifth day; and one on the ninth day. Omitting the four moribund cases the mortality of 355 adult cases treated with the serum is 2.5 per cent.

## PARALYSIS.

Reliable data upon this point and those hereafter to be mentioned are to be had only from the 3,884 reports returned to the Committee. Of these paralytic sequelæ appeared in 328 cases, 9.7 per cent. Of the 2,934 cases which recovered, paralysis was present in 276, or 9.4 per cent. Of the 450 cases which died, paralysis was noted in 52, or 11.4 per cent.

The variety of the paralysis and the date of injection is shown in the following table:

TABLE IV.

VARIETY OF PARALYSIS AND THE DAY OF INJECTION.

RECOVERY CASES.	Cases.	Day of Injection.					
		1st Day.	2d Day.	3d Day.	4th Day.	5th Day.	Unknown.
Paralysis mentioned (variety not specified)	132	8	32	32	19	16	23
Throat only (aphonia, nasal voice or regurgitation)	114	16	21	25	11	16	24
Extremities	14	3	5	2	..	3	1
Ocular	11	..	4	3	1	2	1
General (multiple neuritis)	4	..	1	2	1	..	..
Sterno-mastoid	1	..	1	..	..	..	..
<b>FATAL CASES.</b>							
Paralysis mentioned, (variety not specified)	9	..	3	2	1	2	1
*Cardiac, late after throat clear (in 4 of them throat also)	32	1	2	8	9	8	4
Throat only	6	..	2	..	..	..	4
General late	4	..	1	..	1	2	..
Muscles of respiration	1	..	1	..	..	..	..
Totals	328	28	73	76	43	49	59

\* Cases of heart failure occurring at the height of the disease have not been included here; although they are mentioned among the cases of cardiac paralysis in the table of fatal cases.

Observations of some of the individual cases are interesting, particularly those of cardiac paralysis. It is twice stated that the child had gotten up and walked out of the house, where it was found dead. Twice death occurred after sitting up suddenly; once, on jumping from one bed into another. One patient of twenty years got up contrary to orders and died soon afterward. Another patient was apparently well until he indulged in a large quantity of cake and candy, soon after which cardiac symptoms developed, and he died shortly. One case was that of a woman sixty years old, who had serious organic cardiac disease.

It is difficult from these statistics to state what protective power the serum may have over nerve cells and fibres. Apparently this is not great unless the injections are made early in the disease, and even then in severe cases the amount of damage done to these tissues in twenty-four hours may be very great, even irreparable. Time is not the only element in estimating the effect of the diphtheria toxins.

Great discrepancy exists in the statements made regarding the frequency of paralytic sequelæ after diphtheria. In a series of 1,000 cases reported by Lennox Browne, paralytic sequelæ were present in 14 per cent. In 2,448 cases by Sanné, paralysis was noted in 11 per cent. In the series of cases here reported, the difference is slightly in favor of the antitoxin treatment, but paralysis is certainly frequent enough to show how extremely susceptible the ner-

vous elements are to the diphtheria toxins. One thing is quite striking from a study of these cases, and that is the proportion that have died from late cardiac paralysis. That very many of them would undoubtedly have succumbed earlier in the disease from suffocation (laryngeal cases) or diphtheritic toxemia, had the serum not been employed, is beyond question. Although the serum is able to rescue even many such desperate cases, it cannot overcome the effects of the toxins upon the cells, which have occurred before it was injected.

## SEPSIS.

Sepsis is stated to have been present in 362 of the 3,884 cases or 10.7 per cent. It was present in 145 or 33 per cent. of the fatal cases. Some explanation is necessary for a correct appreciation of these figures. The majority of the reporters, it is plain from their remarks, have not distinguished between diphtheritic toxemia and streptococcus sepsis. The former is certainly meant in the great majority of the cases. There is a very small proportion in which there is evidence of streptococcus sepsis. The six cases complicating measles, and the five complicating scarlet fever, however, should possibly be included among this list.

## NEPHRITIS.

The statements on this point are quite unsatisfactory. The reports state that nephritis was present 350 times, or in 10 per cent. of the cases. On the one hand it must be stated that the diagnosis of nephritis rests in many cases simply upon the presence of albumin in the urine; but, on the other hand, it is true that in a large number of the cases, more than half, no examination of the urine is recorded as having been made, so that it is impossible to state with anything like approximate accuracy, the frequency of nephritis in these cases. Of the 450 fatal cases, the presence of nephritis is mentioned without qualification or explanation in 39 cases; these being usually put down also as septic, dying in the acute stage of the disease. There were 15 fatal cases, however, in which the renal disease was stated as the cause of death. In no less than nine the nephritis occurred late in the disease, usually during the second or third week. In these 15 cases the evidence of severe nephritis was conclusive, such symptoms being present as dropsy, suppression of urine, with coma or convulsions.

## BRONCHO-PNEUMONIA.

Broncho-pneumonia is stated to have been present in 193 of the 3,884 cases, or 5.9 per cent., a remarkably small proportion when compared with hospital statistics. Among the patients that recovered, broncho-pneumonia was noted 114 times or in 3.8 per cent.; among the fatal cases 79 times, or in 17.5 per cent., but in only about one-half of these was the pneumonia the cause of death. Of these 87 were laryngeal cases operated upon late, 10 were septic cases, and the pulmonary disease was coincident with the height of the diphtheritic process. In seven pneumonia was independent of both the above conditions, occurring late in the disease in all but two.

## LARYNGEAL CASES.

Of the 3,884 cases reported to the Committee, the larynx is stated to have been involved in 1,256 cases



or 37.5 per cent. This proportion is somewhat higher than usual, and is partly explained by the fact that several physicians have sent in the reports only of their laryngeal cases. These laryngeal cases occurred in the practice of 379 physicians.

In 691, or a little more than one-half the number, no operation was done, and in this group there were 128 deaths. In 48 of them laryngeal obstruction was responsible for the fatal issue, operation being refused by the parents, or no reason for its being neglected having been given. In the 80 remaining fatal cases the patients died of other complications, and not from the laryngeal disease.

In the 563 cases, therefore, or 16.9 per cent. of the whole number, there was clinical evidence that the larynx was involved, and yet recovery took place without operation. In many of these cases the symptoms of stenosis were severe, and yet disappeared after injection without intubation. No one feature of the cases of diphtheria treated by antitoxin has excited more surprise among the physicians who have reported them, than the prompt arrest, by the timely administration of serum, of membrane which was rapidly spreading downwards below the larynx. Such expressions abound in the reports as "wonderful," "marvellous," "prepared to do intubation, but at my next visit the patient was so much better it was unnecessary," "in all my experience with diphtheria have never seen anything like it before," "no unprejudiced mind could see such effects and not be convinced of the value of the serum," etc.

In establishing the value of the serum, nothing has been so convincing as the ability of antitoxin, properly administered, to check the rapid spreading of membrane downward in the respiratory tract, as is attested by the observations of more than 350 physicians who have sent in reports.

Turning now to the operative cases we find the same remarkable effects of the antitoxin noticeable. Operations were done in 565 cases, or in 16.7 per cent. of the entire number reported. Intubation was performed 533 times with 138 deaths, or a mortality of 25.9 per cent. In the above are included nine cases in which a secondary tracheotomy was done, with seven deaths. In 32 tracheotomy only was done with 12 deaths, a mortality of 37.4 per cent. Of the 565 operative cases, 66 were either moribund at the time of operation, or died within twenty-four hours after injection. Should these be deducted, there remain 499 cases operated upon by intubation or tracheotomy, with 84 deaths, a mortality of 16.9 per cent.

Of the 2,819 cases not operated upon, there were 312 deaths, a mortality of 11.3 per cent. Deducting the moribund cases, or those dying within twenty-four hours after injection, the total mortality of all non-operative cases was 9.12 per cent.

Let us compare the results of intubation in cases in which the serum was used, with those obtained with this operation before the serum was introduced. Of 5,546 intubation cases in the practice of 242 physicians, collected by McNaughton and Maddren (1892) the mortality was 69.5 per cent. Since that time statistics have improved materially by the general use (in and about New York, at least) of calomel fumigations. With this addition, the best results published (those of Brown) showed in 279 cases a mortality of 51.6 per cent.

Let us put beside the cases of McNaughton and

Maddren the 533 intubations with antitoxin, with 25.9 per cent. mortality. With Brown's personal cases let us compare those of the fourteen observers who have reported to the Committee 10 or more intubation operations in cases injected with serum. These comprise 280 cases with 65 deaths, a mortality of 23.2 per cent. In both comparisons the mortality without the serum is more than twice as great as in the cases in which serum was used.

The reports of some individual observers concerning intubation with the serum are interesting:

Neff, New York: 27 operations, with 27 recoveries.

Rosenthal, Philadelphia: 18 operations, with 16 recoveries.

Booker, Baltimore: 17 operations, with 17 recoveries, including one aged ten months, and one seven and a half months.

Seward, New York: eight operations, with eight recoveries.

McNaughton, Brooklyn: "In my last 72 operations without serum, mortality 66.6 per cent.; in my first 72 operations with serum, mortality 33.3 per cent."

O'Dwyer, New York: "In my last 100 intubations, first 70, without serum, mortality 73 per cent.; last 30, with serum, mortality 33.3 per cent."

But even these figures do not adequately express the benefit of antitoxin in laryngeal cases. Witness the fact that over one-half the laryngeal cases did not require operation at all. Formerly 10 per cent. of recoveries was the record for laryngeal cases not operated upon. Surely, if it does nothing else the serum saves at least double the number of cases of laryngeal diphtheria that has been saved by any other method of treatment.

The great preponderance of intubation over tracheotomy operations shows how much more highly the profession in this country esteems the former operation.

#### A STUDY OF THE FATAL CASES.

Of the 450 fatal cases in the Committee's Report, 229, or one-half, received their first injection of the serum on or after the fourth day of the disease, and 152, or over one-third of these, on or after the fifth day.

There were 58 cases in which it was stated that the child was moribund at the time of injection, the serum being administered without the slightest expectation of benefit, but at the earnest solicitation of the parents.

There remain 350 cases in which the cause of death could be pretty accurately determined by the reports. These died from the following causes, the most important cause being placed first:

*Sepsis (including diphtheritic toxemia)* was the cause of death in 105 cases; of which 16 had nephritis, four were intubated or tracheotomized, two were laryngeal cases not operated upon, four had paralysis, one had pneumonia, and in one the fatal sepsis was attributed to a traumatic condition of the left knee.

*Cardiac paralysis* was the cause of death in 53 cases. Under this head are included cases of sudden heart failure occurring at the height of the disease (21 in number) as well as those more commonly designated as heart paralysis, where death occurred suddenly after the throat cleared off. Of the latter there were 32 examples; four of these cases had throat paralysis, 19 were septic, eight had nephritis, five were intubated, and one tracheotomized.



*Broncho-pneumonia* was put down as the cause of death in 54 cases. In 37 of these it followed laryngeal diphtheria; of these 22 were intubated, and four tracheotomized; two had nephritis; nine were septic. Broncho-pneumonia and sepsis was the cause of death in 10 cases, of which three had nephritis and one general paralysis. Broncho-pneumonia caused death in seven cases, apart from sepsis or laryngeal diphtheria; of these only one had nephritis; one died from heart failure; and in five pneumonia came on late in the disease.

*Laryngeal diphtheria without operation* caused death in 48 cases. In some of these the operation was refused by the parents, in others it was neglected by the physician, the patients dying of asphyxia; three of these cases had nephritis, four were septic, two had pneumonia, and one had sepsis and nephritis.

*Diphtheritic tracheitis or bronchitis* caused death in 11 cases; all of these were intubated, and in two there was evidence of the existence of membrane in the bronchi before operation. There were 33 other cases in which death followed laryngeal diphtheria without the supervention of pneumonia. It is highly probable that in some of these death was due to membranous tracheitis or bronchitis. All of them were operated upon; ten were septic, two had paralysis, and one had nephritis.

*Sudden obstruction of the intubation tube* was the cause of death in three other laryngeal cases.

*The tube was coughed up* in three cases, fatal asphyxia occurring before the physician could be summoned.

*Died on the table during tracheotomy*, one case.

*Nephritis* was the cause of death in 15 cases; seven of these were septic, and three had been intubated.

*General paralysis* was the cause of death in five cases; in all probably the pneumogastric was involved.

*Paralysis of the respiratory muscles* produced death in one case, one of laryngeal diphtheria, which was intubated, and was complicated by broncho-pneumonia.

*Measles associated with diphtheria* produced death in six cases; five of these were laryngeal and were intubated; in two there was pneumonia, and in two sepsis. Diphtheria developed during the height of the measles, or immediately followed it.

*Scarlet fever with diphtheria* was the cause of death in six cases; in three of these there was broncho-pneumonia, nephritis and sepsis; in two scarlet fever preceded diphtheria, and in one of these there was sepsis with gangrene of the tonsils. In the sixth case the patient died of scarlet fever, which developed during convalescence from the diphtheria.

*Gangrene of the cervical glands or cellular tissue of the neck* was the cause of death in two cases associated with profound general sepsis.

*Endocarditis* caused death in one case, nineteen days after the diphtheria.

*Diphtheritic inflammation of the tracheal wound with sepsis* caused death in one case.

*General tuberculosis*, five weeks after diphtheria, was assigned as the cause of death in one case.

*Exhaustion* was the cause of death in three cases, one a protracted case; another complicated by pneumonia and sepsis; one by nephritis.

*Convulsions* was the cause of death in three cases apart from disease of the kidneys. In one, the well-known Brooklyn case, the girl died in ten minutes after the injection, in another twenty-four hours after injection, in the third the particulars were not given.

*Meningitis* was assigned as the cause of death in one case.

#### THE KINDS OF ANTITOXIN USED.

They are given in the order of frequency with which they have been used. First, the serum prepared by the New York Board of Health; second, Behring's; third, Gibier's;<sup>3</sup> fourth, Mulford's; fifth, Aronson's; sixth, Roux's. In addition a large number of cases are reported as having been treated by the serum prepared by the Health Boards of different cities—Brooklyn, Newark, Rochester, Pittsburgh, etc. The largest number of cases have been treated by the serum prepared by the New York Health Board, a very large number by Behring's serum, all others being relatively in small numbers.

*Dosage and number of injections.* In the great majority of cases but one injection is reported. In very severe ones two and three have been given. The largest amount is in a case by Weimer (Chicago) who gave eighteen injections of Behring's serum to a laryngeal case in a child thirteen years old. Another instance of ten injections is reported with no unfavorable symptoms.

As a rule the dosage has been smaller in antitoxin units than is now considered advisable, particularly in many of the laryngeal cases and others injected later than the second day.

CASES INJECTED REASONABLY EARLY (DURING THE FIRST THREE DAYS) IN WHICH ANTITOXIN IS SAID TO HAVE PRODUCED NO EFFECT, THE DISEASE ENDING FATALLY.

These cases are 20 in number. Brief reports are introduced that the reader may judge to what degree they may be regarded as a test of the serum treatment. In our statistical tables all of them have been included among the fatal cases.

In Cases I and II the cultures were reported negative. Case I, by Gallagher, New York: Child, eighteen months old; septic; although no eruption was present, the reporter was "inclined on reflection to regard this case as one of scarlatinal sore throat."

CASE II, by Potter, Buffalo. Male, fourteen months old; two cultures made, but no Löffler bacilli found; membrane in the nose and pharynx. Injected on the third day, one dose of Behring's serum No. 1. No improvement; death from sepsis. "Probably pseudo-diphtheria" (I. H. P.).

In Cases III to IX no cultures were made.

CASE III, by Tefft, New Rochelle. Seven years old; injected after eighteen hours' illness; two injections of Behring's No. 2 serum; membrane on the tonsils, pharynx and nose, no effect observed from injections; patient dying on the third day.

CASE IV, by Tefft. Male, four years old; membrane on the tonsils and pharynx; injected after thirty-six hours' illness with Behring's No. 2; died on the third day; no noticeable effect from the injection.

CASE V, by Tefft. Six years old; membrane on the tonsils, nose and pharynx; septic; injected after thirty-six hours' illness; three injections of Behring's No. 2. "Saw no effect from the injections, the disease going steadily on to a fatal termination."

<sup>3</sup> It is worthy of note that in the tests made by the State Board of Health of Massachusetts, published under date of April 6, 1896, this serum was found far below the standard as labelled upon the bottle; thus a package marked to contain 2,500 units, by test was found to contain less than 700. All the other varieties of serum tested were found essentially up to the standard.

CASE VI, by Cameron, Montreal. Two and a half years old; fifty hours ill; membrane on the tonsils, nose and pharynx; septic; no improvement noticed, and child died twenty hours after injection.

CASE VII, by Baker, Newtonville, Mass. Three years old; laryngeal diphtheria; injected on the third day 10 c. c. Roux's serum; cyanosis; intubation; temperature 103° F., and continued high until death in eighteen hours after operation; injections had no effect.

CASE VIII, by Anderson, New York. Three years old; injected after three hours' illness; membrane on the tonsils, nose and pharynx; one injection New York Health Board antitoxin. "A case of malignant diphtheria, full duration twenty-four hours."

CASE IX, by McLain, Washington. Four years old; twelve hours sick; membrane on the pharynx and larynx; two injections; no operation; first injection early in the morning, the other early in the afternoon; died the same day; no change in the condition; antitoxin had no apparent effect.

In CASES X to XIII diphtheria complicated measles, all reported by W. T. Alexander, New York. Disease confined to the larynx in all; in three the stenosis developed during measles, and in one while the patient was convalescing from measles; diagnosis confirmed by culture in every case, and in all intubation performed. Antitoxin seemed to have no effect, the cases going on to a fatal termination; all received their injections within twenty-four hours after the laryngeal symptoms appeared.

In three cases — XIV to XVI — the type of the disease was malignant from the outset.

CASE XIV, by Lloyd, Philadelphia. Fifteen months old; injected after thirty-six hours' illness; diagnosis confirmed by culture; membrane covered the tonsils, pharynx, nose, and larynx; intubation; sepsis; death on the fifth day. Although antitoxin was used as promptly as possible no perceptible effect noticed. One injection, Behring's No. 3, was given.

CASE XV, by Wert, Mount Vernon, N. Y. Eighteen months old; injected on the third day; diagnosis confirmed by culture; membrane on the tonsils and pharynx. "Very intense type of the disease." Antitoxin could not be procured before the third day; Gibier's serum used. "Died suddenly in apparent convulsions about ten hours after injection; urine not examined; very little passed."

CASE XVI, by Ingraham. Six years old; membrane covered the tonsils, pharynx, and larynx; diagnosis confirmed by culture; pneumonia present; condition very bad; injected after two and a half days' illness; three injections of Behring's serum; no benefit noticed.

CASE XVII, by Johnson, Buffalo. Three years old; twelve hours ill; case septic from the start; membrane on the tonsils, pharynx, and larynx; diagnosis confirmed by culture. "Antitoxin apparently had very little effect."

CASE XVIII, by Baker, Newtonville, Mass. Two and a half years old; twenty hours ill; disease confined to larynx; diagnosis confirmed by culture, one injection of Gibier's serum; intubation. "Was doing well a few minutes before death when child got up in its crib, changed color and died almost immediately." Death attributed to "sudden heart failure; found no obstruction of the tube."

CASE XIX, by Story, Washington. Five years

old; in fair condition; thirty-six hours ill; diagnosis confirmed by culture; membrane on the tonsils, pharynx and larynx; one injection of United States Marine Hospital antitoxin; injection produced no effect.

CASES IN WHICH UNFAVORABLE SYMPTOMS WERE, MIGHT HAVE BEEN, OR WERE BELIEVED TO HAVE BEEN, DUE TO ANTITOXIN INJECTIONS.

Only three cases reported to the Committee could by any possibility be placed in this category. All of the details furnished by the reporters are here reproduced:

CASE I, by Kortright, Brooklyn. Sudden death in convulsions ten minutes after injection. This case is the already well-known Valentine case, occurring in Brooklyn in the spring of 1895. The principal points were as follows: A girl sixteen years old; in good condition; tonsillar diphtheria; diagnosis confirmed by culture; injected on the first day with 10 c. c. Behring's serum; died in convulsions ten minutes later.

CASE II, by Kerley, New York. Fairly healthy boy, two and one-half years old; membrane on tonsils, pharynx and in nose. Diagnosis confirmed by culture; injected on the morning of the fourth day with 10 c. c. (1,000 units) New York Health Board serum; temperature at time of injection 100.4° F; no sepsis, and child apparently not very sick; urine free from albumin. Distinctly worse after injection; in ten hours temperature rose to 103° F.; urine albuminous; throat cleared off rapidly, but marked prostration and great anemia, with irregular fluctuating temperature continued and death from exhaustion with heart failure four days after the use of the serum.

CASE III, by Eynon, New York. Male, three and one-half years old; diagnosis confirmed by culture; two days ill; membrane on tonsils and in nose; two injections New York Health Board serum. "A rapid nephritis developed after the second injection causing coma, convulsions and death twenty hours after the second injection." In response to an inquiry for further particulars the following was received: "The case seemed a mild one, but the injection was given one afternoon and repeated the following afternoon, about 1,500 units in all. The urine up to that time had not been examined. About fourteen or sixteen hours after the second injection unfavorable symptoms began to develop pointing to infection of the kidneys. The urine was found to be loaded with albumin. My impression at the time was that the antitoxin either produced, hastened or intensified nephritis, thereby causing the fatal termination."

In regard to the three fatal cases just cited, Case I is wholly unexplained. In Case II the query arises, Did this sudden change hinge upon the injection of the serum, or was it one of those unexplained abrupt changes for the worse in a case apparently progressing favorably, so often observed in diphtheria? As regards Case III it will be seen from the letter that the evidence is not at all conclusive. All details available are given, and the reader may draw his own conclusions.

#### CLINICAL COMMENTS.

The following are selected from hundreds which have been received, and may be taken fairly to repre-

sent the sentiments of the physicians who have sent in reports:

Dr. Douglass H. Stewart, New York, sends reports on four cases, all desperate ones, and all "presumably fatal under any other form of treatment." Very extensive membrane in all; larynx involved in three; in one neglected case in a child three years old, *injected upon the fifth day*, the membrane covered the tonsils, nose, pharynx and larynx. Broncho-pneumonia, nephritis and sepsis all present. Temperature 107° F. at the time of the first injection. Prostration so great that he dared not attempt intubation. Believes that this case would certainly have been fatal in a few hours without antitoxin. Perfect recovery.

In another case, three years old, membrane first discovered in the left ear, next morning seen upon the tonsils, and spread in a few hours over the pharynx into the larynx and trachea. Intubation necessary in a few hours; had never seen membrane spread so rapidly as in this child. Urine albuminous; membrane subsequently expelled from larynx and trachea in large casts, with profuse bloody expectoration. Complete recovery on the ninth day. The physician describes this as "the very worst case of diphtheria that has ever come under my notice." Five thousand four hundred antitoxin units were given in four injections. He remarks: "My experiences in the past have been so very unfortunate that the advocates of antiseptics or therapeutics were a constant surprise to me. It has been my fate to have the most desperate cases unloaded upon my shoulders. I had been forced into the belief that the profession was absolutely powerless in the presence of true diphtheria; have lost case after case with tube in the larynx and calomel fumigations at work. Previous to antitoxin my only hope had become centered in nature and stimulants. In two years have not lost a single case, and surely I may be pardoned if I suffer from diphtheria-phobia in a sub-acute form, and use antitoxin sometimes unnecessarily."

Dr. L. L. Danforth, New York, states that during his twenty-two years of practice in New York he has seen many fatal cases of diphtheria, had used all kinds of remedies, mainly those of the homeopathic school, and while he had as much confidence in the latter as in anything else, he had seen so many deaths during the year past that he "hailed with delight the advent of antitoxin, and determined to use it." Reports five cases, all of a severe type. "The result in every case has been marvellous, I would not dare to treat a case now without antitoxin."

Dr. H. W. Berg, New York, reporting 14 cases, says: "I have not yet ceased to be surprised at the recovery of some of these cases, which, in the light of my former experience with diphtheria treated without antitoxin, seemed to be irretrievably lost."

Dr. George McNaughton, Brooklyn, reports 72 laryngeal cases, with 24 deaths; 67 of these were intubated, with 21 deaths. He states that he has kept no records of cases other than laryngeal ones, as these seemed the best test of the serum treatment. He believes that if the serum is used early, very many cases will not need operation for the relief of stenosis. "I would urge the use of antitoxin in all cases of croup in any patient who has an exudation upon the pharynx; would not wait for bacteriological confirmation of diagnosis, for in so doing valuable time is lost." Has noticed that the tube is coughed up more fre-

quently in injected cases, and believed this due to the fact that the swelling of the tissues subsides at an earlier date.

Dr. D. C. Moriata, Saratoga, reporting four cases, says that the first was a malignant one, and "I only used the remedy because I am health officer and was urged to do so, as the type of the disease was that from which I have seen recovery but once in eleven years." Boy five years old, four days ill when injected; great prostration, rapid breathing, and he was "practically gone." Nares filled, and tonsils and pharynx covered; severe nasal hemorrhage; cervical glands greatly swollen; heart's action very frequent and feeble; child unable to lie down. Behring's serum, 20 c. c. injected; in six hours evidently more comfortable; in eighteen hours decidedly improved; in twenty-four hours sitting up and feeling much better; in forty-eight hours all urgent symptoms gone and membrane loosening. Subsequently had nephritis, which lasted six weeks, and multiple neuritis, which persisted for three months, but ultimately recovered perfectly. "I send this report because it converted me. No unbiased person familiar with diphtheria could see such results as this and not feel there must be good in it."

Dr. F. M. Crandall, New York, sends report of a child seven years old. Membrane on the tonsils and in larynx, with croup for forty hours when antitoxin was injected and intubation done. Progress of the disease had been rapid; semi-stupor and eyes half open; very feeble, rapid pulse; intense toxemia; general cyanosis. Both cyanosis and dyspnea persisted after intubation, showing clearly the presence of membrane below the tube. Case regarded as "absolutely hopeless." The first change was seen in the disappearance of toxemia, with improvement in the pulse, clearness of the mind, etc.; later a change in the local condition; large masses of membrane were expelled from the larynx and trachea, necessitating frequent removals of the tube. Tube finally removed in a week, with complete recovery.

Dr. Reynolds, Baltimore, mentions a case showing the danger of relying too implicitly upon the bacteriological diagnosis. Male, three years. Culture reported only staphylococcus and streptococcus, consequently injection delayed until the fifth day, when membrane covered tonsils, nose and pharynx. Child died two days later. A sister subsequently contracted the disease, received antitoxin on the third day and recovered. The reporter would not wholly rely upon the culture test for diagnosis.

#### SUMMARY.

(1) The report includes returns from 615 physicians. Of this number more than 600 have pronounced themselves as strongly in favor of the serum treatment, the great majority being enthusiastic in its advocacy.

(2) The cases included have been drawn from localities widely separated from each other, so that any peculiarity of local conditions to which might be ascribed the favorable reports must be excluded.

(3) The report includes the record of every case returned except those in which the evidence of diphtheria was clearly questionable. It will be noted that doubtful cases which recovered have been excluded, while doubtful cases which were fatal have been included.

(4) No new cases of sudden death immediately after injection have been returned.

(5) The number of cases injected reasonably early in which the serum appeared not to influence the progress of the disease was but nineteen, these being made up of nine cases of somewhat doubtful diagnosis; four cases of diphtheria complicating measles, and three malignant cases in which the progress was so rapid that the cases had passed beyond any reasonable prospect of recovery before the serum was used. In two of these the serum was of uncertain strength and of doubtful value.

(6) The number of cases in which the patients appeared to have been made worse by serum were three, and among these there is only one new case in which the result may fairly be attributed to the injection.

(7) The general mortality in the 5,794 cases reported was 12.3 per cent.; excluding the cases moribund at the time of injection or dying within twenty-four hours, it was 8.8 per cent.

(8) The most striking improvement was seen in the cases injected during the first three days. Of 4,120 such cases the mortality was 7.3 per cent.; excluding cases moribund at the time of injection or dying within twenty-four hours, it was 4.8 per cent.

(9) The mortality of 1,448 cases injected on or after the fourth day was 27 per cent.

(10) The most convincing argument, and to the minds of the Committee an absolutely unanswerable one, in favor of serum therapy is found in the results obtained in the 1,256 laryngeal cases (membranous croup). In one-half of these recovery took place without operation, in a large proportion of which the symptoms of stenosis were severe. Of the 533 cases in which intubation was performed, the mortality was 25.9 per cent., or less than half as great as has ever been reported by any other method of treatment.

(11) The proportion of cases of broncho-pneumonia — 5.9 per cent. — is very small and in striking contrast to results published from hospital sources.

(12) As against the two or three instances in which the serum is believed to have acted unfavorably upon the heart, might be cited a large number in which there was a distinct improvement in the heart's action after the serum was injected.

(13) There is very little, if any, evidence to show that nephritis was caused in any case by the injection of serum. The number of cases of genuine nephritis is remarkably small, the deaths from that source numbering but 15.

(14) The effect of the serum on the nervous system is less marked than upon any other part of the body; paralytic sequelæ being recorded in 9.7 per cent. of the cases, the reports going to show that the protection afforded by the serum is not great unless injections are made very early.

The Committee feels that this has been such a responsible task that it has thought best to state the principle which has guided it in making up the returns. While it has endeavored to present the favorable results with judicial fairness, it has also tried to give equal or even greater prominence to cases unfavorable to antitoxin.

In conclusion, the Committee desires, in behalf of the Society, to express its thanks to the members of the profession who have coöperated so actively in this in-

vestigation, and to Dr. A. R. Guerard for the preparation of the statistical tables.

(Signed)

L. EMMETT HOLT, M.D.,  
W. P. NORTHRUP, M.D.,  
JOSEPH O'DWYER, M.D.,  
SAMUEL S. ADAMS, M.D., } *Committee.*

#### THE ACTION OF THE SOCIETY UPON THE REPORT.

At the close of its presentation, the Society voted to accept the report of the Committee and after a full discussion it was decided to embody its conclusions in the following resolutions:

(1) *Dosage.* For a child over two years old, the dosage of antitoxin should be in all laryngeal cases with stenosis, and in all other severe cases, 1,500 to 2,000 units for the first injection, to be repeated in from eighteen to twenty-four hours if there is no improvement; a third dose after a similar interval if necessary. For severe cases in children under two years, and for mild cases over that age the initial dose should be 1,000 units, to be repeated as above if necessary; a second dose is not usually required. The dosage should always be estimated in antitoxin units and not of the amount of serum.

(2) *Quality of Antitoxin.* The most concentrated strength of an absolutely reliable preparation.

(3) *Time of Administration.* Antitoxin should be administered as early as possible on a clinical diagnosis, not waiting for a bacteriological culture. However late the first observation is made, an injection should be given unless the progress of the case is favorable and satisfactory.

The Committee was appointed to continue its work for another year and was requested to issue another circular asking for the further coöperation of the profession, this circular to be sent out as soon as possible in order that physicians may record their cases as they occur through the coming year.

### Clinical Department.

#### FURTHER CASES ILLUSTRATIVE OF RENAL SURGERY.<sup>1</sup>

BY F. S. WATSON, M.D., BOSTON.

CASE VI. The patient, forty-three years old, was first seen by the writer fifteen months ago.

He had had a urethral stricture for twenty years. Sixteen years ago it was operated upon, and two subsequent operations were done during the next three years. From these he made a good recovery. The passage of sounds once in three weeks has been sufficient to maintain the calibre of the urethra at the size of 23, French scale, until within the past year.

During the last ten years he has had attacks of urethral fever once or twice every year. In the autumn of 1894 these attacks became more serious, and he was much prostrated by them. At that time there was a large tumor discovered by his physician in the left loin. As he recovered from this illness the tumor gradually diminished in size, and at the time of his first visit to the writer was not well defined, although

<sup>1</sup> These cases are to be added to the series published in the Journal of June 11, 1896.

it could be felt. The urinary stream was very small. The urine was loaded with pus, and of a rather low specific gravity (1.011). The patient was sallow, weak, often feverish at night, and looked like a seriously sick man.

Early in January, 1895, the stricture of the anterior urethra, of which there were two, of a calibre of 15, French scale, were divided by internal urethrotomy, and the stricture of the deep urethra, which admitted a filiform bougie only, by an external perineal urethrotomy.

A drainage-tube was tied into the bladder through the latter wound, with the intention of draining the bladder and the left kidney, which was believed to be the seat of a pyo-nephrosis. This effort was, however, unsuccessful, and the tumor in the left renal region having reappeared suddenly a few days after the operation for stricture, and the patient's condition becoming suddenly alarming, it was decided to explore the left kidney, and to drain or remove it according to the conditions found.

*Operation.*—Lumbar nephrotomy was performed January 16, 1895.

The kidney was rapidly exposed in the loin by a wide-armed, V-shaped incision, one arm of which was parallel with the twelfth rib and the other with the outer border of the quadratus muscle, the angle of the V being pointed upward and toward the spine.

A greatly distended kidney presented in the wound, and was opened through its convex posterior border by an incision about three inches long. The kidney was the seat of an immense pyo-nephrosis. There were several distinct pus cavities, the separating walls of which were broken down so as to form one large cavity, which was carefully cleansed.

The edges of the kidney wound were sutured to the abdominal wound with silk sutures and two drainage-tubes were inserted into the kidney pelvis. A No. 13 French bougie was passed from the pelvis of the kidney into the bladder through the ureter, showing the latter to be pervious. The patient remained in a critical condition for twelve hours, then rallied, and made an uninterrupted recovery. He was up and about at the end of the third week. The drainage of the kidney through the loin has been maintained ever since. There is but little pus in the urine from this kidney, and almost none in that which comes from the bladder.

The specific gravity of the urine from the kidney operated on is from 1.011 to 1.013.

The patient had regained his health entirely and is in excellent condition. He wears a mechanical contrivance consisting of a hard-rubber plate and tube, through which a soft-rubber tube passes into the kidney, its outer end being led into a flat bottle which is attached to the waistband, and rests upon the left buttock.

It is now seventeen months since the operation, and the patient's condition has steadily improved. He seems likely to be another example of the advantage that nephrotomy offers, at any rate as a preliminary operation, as compared with a primary nephrectomy, even when there is very extensive suppuration of the kidney, for there are numerous cases reported in which restoration to health has occurred (some of the most interesting being those of Knowsley-Thornton) after nephrotomy with permanent drainage through the loin.

The kidney operated on in this case has shown its

ability to perform a fair share of its proper work, and is likely to do so for a long time to come, and meanwhile the other one will have time to establish a compensatory function at its leisure.

CASE VII. Movable kidney. Nephrorraphy, recovery.

The patient, a young woman twenty-six years old, who had previously been well, after lifting a heavy weight two years ago, began to have pain in the left kidney; at first this was occasional only, but soon became almost constant. It took the form for the most part of a dull ache below the twelfth rib; but from time to time it came in spasms, which were accompanied by a sense of fulness in the renal region. These attacks lasted ordinarily about an hour or two; sometimes they were of longer duration.

The patient soon became anemic and lost flesh and appetite. The anemia gradually yielded to treatment by iron, out-door air and careful regulation of the digestion.

Crystals of oxalate of lime appeared in the freshly passed urine from time to time, sometimes associated with attacks of pain, but not invariably. Albumin in slight traces was also present frequently, and the quantities of the urine became very variable, the most striking feature in this respect being the occasional occurrence of polyuria which lasted for about twelve hours at a time, the specific gravity at such times being usually 1.001 to 1.002.

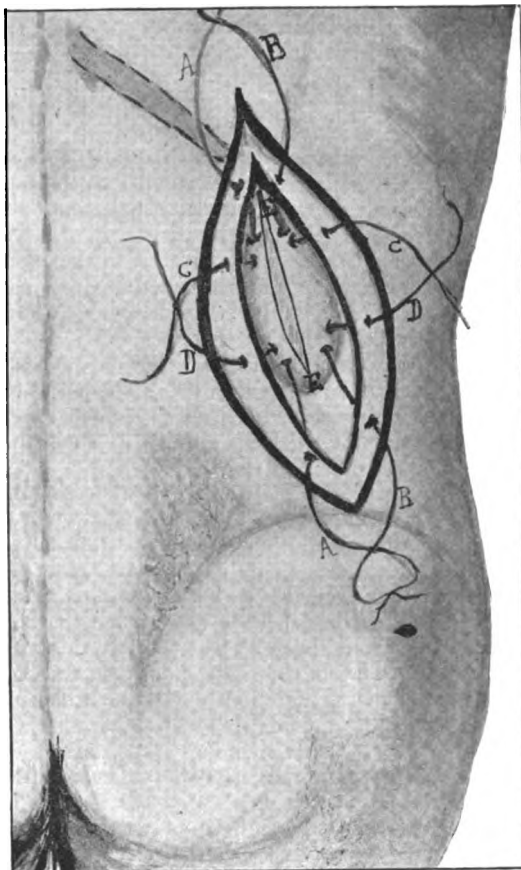
With the attacks of pain the patient complained sometimes of a sense of nausea, which was greatly increased if pressure was made over the left kidney. Six months after these symptoms appeared, there began to be an improvement in her general condition, and during the spring of 1895 she gained in health for about three months. At the end of this time, however, pain began in the right kidney, and that in the left increased. At no time did these attacks assume the character of true renal colic.

In July of 1895, while examining the patient during an attack of pain felt in both sides, a floating tumor was felt on either side of the abdomen. These tumors were of the shape and size of the kidneys, and could be made to pass between the place low down toward the brim of the pelvis which they occupied to their natural position, giving as they did so a thoroughly characteristic sense to the fingers as they slipped into place in the back.

In August the attacks of spasmodic pain became more frequent, and it became evident that the left kidney was the seat of an intermittent hydronephrosis, from the following signs: Together with the attacks of pain a swelling could be plainly felt in the left loin and left side of the abdomen; after a time this would spontaneously disappear or could usually be made to do so at once by raising the hips of the patient. There always then occurred a sudden desire to urinate, and the patient would pass about eight ounces of urine, generally of a pale color and of low specific gravity. There was often an accompanying sense of nausea. The patient said that she could feel a swelling come gradually in the renal region, and was conscious that it subsided suddenly and that with this came almost at once the strong desire to urinate, and relief of pain. The writer actually observed the appearance and disappearance of this swelling several times.

*Operation.*—August 25, 1895. Nephrorraphy, by

a lumbar incision parallel with the last rib, was performed by Dr. Maurice H. Richardson. The kidney was seen to be of normal appearance, and palpation failed to reveal calculus. The kidney was sutured to the abdominal wound by six silkworm sutures passed through the fibrous capsule of the kidney, but not through the substance of the organ. The capsule was not split. The abdominal wound was closed by silkworm sutures. It united by first intention.



A A, B B, Longitudinal sutures passing through lumbar muscles, capsule and cortex of kidney.  
C C, D D, Transverse sutures passing through the same structures.  
A and B, and C and D, are tied together at either end, thus slinging the kidney as in a hammock and opposing the muscular incision.  
E E, Longitudinal slit in capsule.

During the first six days the patient suffered a degree of pain such as I have never seen follow any surgical operation. The urine diminished in quantity during this time, and it was feared to give large doses of morphia such as would have been required to stop the pain. She had, however, subcutaneous doses of one-quarter of a grain three or four times in the twenty-four hours, but these were almost without effect. The only relief to the pain was found in the sitting posture, and the patient could not be kept on her back in consequence. It was on this account, I think, that the kidney became detached again.

On the sixth day the patient said that she was sure that the kidney had dropped down; the pain suddenly ceased, which seemed confirmatory, although at the time there was not much importance attributed to what the patient said. It was subsequently found to be true, for at the end of a month the kidney could be

plainly felt again in its abnormal position in the abdomen.

The pain returned in this kidney, but was at no time so severe as before the operation. The pain in the right kidney became very severe, and almost constant, and attacks of intermittent hydronephrosis were well marked and frequent.

*Nephrorraphy with a new method of applying the sutures.* — An incision was made along the border of the quadratus. There was very little perineal fat. The kidney was slightly enlarged, but otherwise seemed to be normal.

The posterior border of the kidney was freed from its fat capsule. Two chromicized catgut sutures were then passed through the fibrous capsule and the kidney substance, through two-thirds of the length of the organ, parallel to each other and about half an inch apart on either side of the posterior border of the kidney. These sutures were passed through the edges of the muscular layer of the lumbar wound. Two cross sutures were then carried through the kidney close to the points of entrance and exit of the long stitches. This method of applying the sutures is illustrated in Fig. 1. The object of so placing them is to sling the kidney as in a hammock, in order to secure the longest line of bearing for them and the least amount of cutting action, the cross sutures being placed as an extra security to prevent the tearing out of the long ones by placing an obstacle across their path should they do so.

Attention is called to the way in which the sutures are tied together, for on that depends their acting as a sling or hammock, and the avoidance of their cutting out. Before tying them and closing the lumbar wound, the fibrous capsule was split between the two long sutures over nearly the whole length of the kidney.

The fat capsule was cut away on either side of the convex border of the kidney, as recommended by Edebohl, the four kidney sutures were tied, and the lumbar wound closed by two layers of catgut sutures, one for the muscular, and one for the skin wound.

There was much less pain following this operation than the first, although the patient suffered much for the first four or five days. The pain was, however, bearable in the recumbent posture.

Three months and a half have passed since the operation. The patient has gained eight pounds in weight; there has been no pain in the right kidney since the first three weeks; and for the last six weeks pain has ceased in the left kidney also.

#### A CASE OF ACROMEGALY TREATED WITH THYROID EXTRACT.

BY G. G. SEARS, M.D.,  
Assistant Visiting Physician, Boston City Hospital.

MRS. C., a widow, forty-five years old, first presented herself for treatment at the Boston City Hospital in January, 1895. Her maternal grandfather died insane; her father of a "complication of diseases," probably of cardiac origin, at the age of fifty; her mother of apoplexy at seventy-one. She has lost two brothers from consumption, while one brother, when last seen several years ago, had a brownish discoloration of the skin similar to that of the patient herself, and was "all bloated up."



She has had three children, none of the labors being noteworthy, one of whom died of cholera infantum, the other two are well but not strong.

Her previous medical history consists of an attack of varioloid, when eight years old, erysipelas when eighteen, and pneumonia when twenty. Five years ago she had an attack of grippe accompanied by severe pain in her left ear. She has had occasional attacks of cholera morbus, and has been under treatment for retroversion of the uterus and a lacerated cervix. She reached the menopause about six months ago, but had been irregular for about a year. Her general health has always been good, but she has complained all her life of drowsiness, which in recent years has so increased that now she is liable to drop asleep at any time. With this exception she dates all of her symptoms from twelve years ago, when a flat-iron fell upon her left side, starting up a brisk uterine hemorrhage, which lasted, however, but a short time. The nervous shock was much greater than the physical injury, and after this she passed large quantities of urine and had attacks of sudden weakness, in which she fell but yet retained consciousness. She began also to be very susceptible to cold, so that she had to wear extra flannels and take hot-water bottles to bed with her even in summer. Lately this symptom has grown decidedly better, and she now complains chiefly of local chilly feelings with the appearance of "goose-flesh" in spots about as large as a five-cent piece. Soon after the accident she noticed that her hands and feet were increasing in size, so that while she once wore a  $3\frac{1}{2}$  shoe she now requires a broad 7, and instead of a  $6\frac{1}{2}$  glove she now wears a  $7\frac{1}{2}$ , while her tongue has become so large that it is frequently bitten and at times "feels so big that she wonders whether or not she can thrust it out of her mouth." Her face grew fuller, her nose more prominent and her hair coarser and drier, but it has never fallen out and still hangs nearly to her knees. She has suffered intensely at times, especially at night after sweeping or washing, from a feeling of numbness in her hands, which is accompanied by itching, pain and a sensation of pins and needles. Her body also has at times felt sore and tender all over and on lying down her joints become so rigid that she moves with difficulty, while on rising her knees are so stiff that the first few steps are hard to take. She has had frequent attacks of cardiac palpitation as well as very distressing hot flashes recurring every ten or fifteen minutes. Sweating, especially at night, and most noticeably over the chest, has also been a fairly constant symptom. Every little while she hears a "puffing" in her ears synchronous with the heart and lasting for a longer or shorter period, but which for a day at a time may be nearly constant. About five years ago she lost her husband after a very long and trying illness, and after this she noticed that her mental processes seemed slow and that her memory was greatly impaired, so that she would often begin a sentence and then forget what she was about to say. She also became unusually nervous and irritable over trifles. A month ago her nose was cleared of mucous polypi by Dr. Leland, but they have now returned. Her appetite has been ravenous and her thirst excessive.

The patient is a rather heavily-built woman about five feet five inches tall and weighing 175 pounds. She stands fairly erect without the marked kyphosis which has been noticed in many of these cases. Her

face appears somewhat lengthened, and the frontal aspect of the head is triangular in shape from an enlargement of the jaws, especially the lower, the under teeth closing a little outside the upper. There is no elevation of the eyebrows, but the eyelids appear puffy, and the skin of the face is thickened and mask-like. The nose is noticeably large, the enlargement being in both the soft parts and the bones.

The hair of the head, as well as of the pubes and axillæ, is coarse and dry, but very abundant and only slightly streaked with gray. The teeth are in good condition, but there is some retraction of the gums. The tongue is enlarged to at least a half more than its normal size. Over considerable areas on the neck and face the skin, which is everywhere moist, is brown in color, and similar patches of discoloration are seen over the trunk and limbs.

Scattered over the neck and trunk are very numerous small growths varying in size from the head of a pin to that of a bean, some of which are deeply pigmented. A few are pedunculated but most are sessile. There is no marked fulness above the clavicles.

The clavicles themselves are not noticeably enlarged, but the manubrium seems heavier and thicker than normal, while the angle at its juncture with the second piece of the sternum is more than usually acute. Over the manubrium the percussion note is somewhat dull, the probable result of the increased thickness of the bone.

The ribs seem heavier and are somewhat closer to each other than they should be. Owing to the thick fat layer it is difficult to determine changes in the ilia, but they seem to have become thicker and heavier. There is a very marked enlargement of the hands, especially in their breadth and thickness, which is due less to changes in the bones than in the soft part covering them. The fingers are thick and stubby; the nails are short, broad and marked with longitudinal striations. The crescent is covered.

The feet show similar alterations, but in them an enlargement of the bones is more readily made out, the toes appearing decidedly longer than normal. The ankles and lower part of the legs are puffy and pit deeply on pressure. The chest is fairly-well shaped and measures at the two respiratory extremes 32 and  $34\frac{1}{2}$  inches. Except for a prolongation of the expiratory sound, which can be accounted for by a loss of elasticity of the chest walls, examination of the lungs is negative. The area of cardiac dullness is slightly enlarged laterally, but except for their rapidity and weakness there is no modification of the sounds.

The voice is thick, monotonous and plaintive, while words are very slowly enunciated. All muscular movements are slow and weak, while the tenderness of the hands is so great that she is unable to grasp the dynamometer with sufficient force to move the index. Pulse 128. Temperature  $100^{\circ}$  F.

The following measurements of the head, hands and feet may be of interest. The patient is left-handed.

Circumference of head . . . . .	21 $\frac{1}{2}$ in.
Circumference (chin to vortex) . . . . .	26 in.
Circumference of right palm . . . . .	8 $\frac{1}{2}$ in.
Circumference of left palm . . . . .	8 $\frac{1}{2}$ in.
Length of right middle finger . . . . .	4 in.
Length of left middle finger . . . . .	3 $\frac{1}{2}$ in.
Circumference of middle finger (proximal joint) . . . . .	3 in.
Length of right foot . . . . .	9 $\frac{1}{2}$ in.
Length of left foot . . . . .	9 $\frac{1}{2}$ in.
Width at ball . . . . .	3 $\frac{1}{2}$ in.
Length of great toe . . . . .	2 $\frac{1}{2}$ in.

The enlargement of the hands and feet, however, is more conclusively shown by the larger sizes of gloves and shoes which she now requires than by these measurements.

For the examination of the special senses as well as for the electrical tests, I am indebted to Dr. P. C. Knapp, who went over the case with much care. Smell is nearly lost, there being no perception of camphor or menthol with the right nostril and only slight with the left, a condition probably explained by the presence of polypi. Vision is practically normal, the field is not contracted and the color sense is good. Nothing abnormal was seen in the fundus oculi. Hearing in the right ear is normal, but with the left ear a watch cannot be heard more than six inches away. Taste, cutaneous sensibility and the muscle sense are unimpaired.

The electrical reactions are considerably diminished quantitatively to galvanism and slightly to faradism, but there are no qualitative changes.

The urine had a specific gravity of 1.018 and contained neither sugar nor albumin; the daily amount was slightly in excess of the normal quantity.

She was put on general tonics and on the dried extract of thyroid gland in gradually-increasing doses until 12 grains a day were taken, while galvanism was for a time given by Dr. Knapp.

On the 17th of April, three months after her first visit, she reported that she was feeling very much better and took more interest in current events. Her memory had improved and she spoke and moved more rapidly. Pain in the hands had greatly diminished, so that she slept well at night, but her joints still felt stiff. Her grasp was firm, and she was able to do her own washing and ironing, even to wringing out the clothes with her hands. The "puffing" in her ears was gone and the palpitation of the heart better. There was much less puffiness about the eyes and no pitting over the ankles. She had lost over twenty pounds in weight, but felt stronger than for many months.

From this time to the present her general condition has remained practically the same or possibly has slightly improved. She has been able to do all her own housework, even to the sewing, and has also gone out on one or two occasions in the capacity of monthly nurse. Her mental condition is normal except that she complains that her memory is still somewhat defective. Her weight is still further reduced so that she now tips the scales at 146 pounds, but there has been no change in the measurements of her hands or feet. The longitudinal furrows on her nails are, however, less marked and her tongue shows a considerable diminution in size. The mucous growths in the nose have disappeared and the nasal passages are unobstructed. During last June she suffered for a time from very severe vertical headaches and she has had occasional attacks of palpitation and vomiting, which were apparently due to an overdose of thyroid extract, which she has taken almost continuously in daily amounts varying from three to nine grains. The temperature, which was taken only at infrequent intervals, ranged from 98.5° to 99.2°, more commonly the latter.

The history of the case and the marked physical changes leave little doubt that we were dealing with a case of acromegaly, but certain anomalous symptoms, such as the puffy conditions of the eyelids, which may however, have been simply the result of anemia,

though its appearance was somewhat different, the slow speech and the altered mental state suggested that her condition was also associated with a loss of function of the thyroid gland, which was strengthened by the fact that it could not be felt even after she had lost considerable flesh, and the decided improvement following the administration of thyroid extract. The direct effects of treatment were seemingly apparent in the loss of weight, the diminished trophic disturbance of the nails, the decreased size of the tongue, the disappearance of the mucous growths in the nose, and perhaps also, if Schaefer's observation is correct, that the thyroid secretion dilates the blood-vessels, in the cessation of pain in the hands; but in the latter case it is somewhat doubtful how far this result was due to the action of the remedy and how far to the diminishing influence of the climacteric which she had recently passed and which may have been a more or less potent factor in causing pain from the vasomotor disturbances incidental to it. The other treatment employed consisted of tonics and the careful regulation, so far as possible, of her diet and general hygiene.

Regarding the etiology of the case, the condition of her brother, as she describes it, is interesting as showing a possible family taint, which has not been observed in any of the reported instances; but the facts are too meagre on which to base even a probable diagnosis, and as he lives many miles away no more definite information could be obtained. In her own history no adequate cause could be found. It is true that she dates her symptoms from the time when she was struck with a flat-iron, but the nervous shock which this produced simply called her attention to a condition which had imperceptibly come on, as a photograph taken some months at least before the accident, shows that quite marked changes had already taken place.

## Medical Progress.

### REPORT ON DISEASES OF CHILDREN.

BY T. M. BOTCH, M.D., AND A. H. WENTWORTH, M.D.

#### DIABETES MELLITUS IN CHILDHOOD.<sup>1</sup>

THE author collected 108 cases from the literature which was tabulated. A review of the table shows that 48 of the patients were females, 47 were males, and of the remaining 13 the sex was not stated. In six of the cases, the age was not given. Three were under one year; 26 between one and five years; 31 between five and ten years, and 42 between ten and sixteen years. Traumatism was supposed to be the cause in 11 cases; unfavorable hygienic surroundings in seven; severe illness in four; difficult dentition in two; taking of cold in two, and over-exertion in two. Poverty, fright, worry, convulsions, are all considered to be causes. Heredity and a neurotic family history play an important rôle in the etiology. In 12 cases the parents or near relatives had diabetes. In two cases the father had syphilis.

The symptoms in children are very similar to those met with in adults. The amount of urine passed in twenty-four hours, as a rule, ranged from one and one-half to fourteen pints. In two cases the amount was ten quarts. One of these was a fourteen-year-

<sup>1</sup> Wegell: *Archiv. f. Kinderheilkunde*, 1895. B. xix, H. 1, 2; *Archives of Pediatrics*, February, 1896.



old boy; the case was fatal. The other was a ten-year-old boy, who improved under treatment. The largest amount passed in twenty-four hours was twelve quarts. The patient was a fifteen-year-old boy. The illness was of twenty-one months' duration. Death resulted from general tuberculosis. In this case, 1,240 grammes was the amount of sugar voided in twenty-four hours. The urine was examined for albumin in 28 cases; in 13 it was present. It usually appeared a short time before death. An important, and for the prognosis, an unfavorable symptom is the presence of acetones in the urine. This was found in 19 of the author's cases, and was followed by death in nearly all.

An important symptom was discovered by Ebstein, who found in the urine drawn from a girl while in diabetic coma, short, thick, granular casts. Kulz and Aldehoff found similar casts in 20 cases who were in diabetic coma. They were only found a short time before the convulsion, and are considered by the author to be an important sign of threatened attack. The prognosis is most unfavorable.

Of the 108 cases, 69 died. Of the remaining cases, not all are to be considered as having recovered, because many passed from under observation and were lost sight of.

#### ASCARIS LUMBRICOIDES IN THE LIVER OF A CHILD.<sup>2</sup>

At the autopsy held upon a ten-months-old child, a mass of round worms was found in the intestines. One was found in the ductus choledochus, another in the gall-bladder. In the upper portion of the left lobe of the liver, a small bile-duct was found dilated to the size of the little finger. In it were three of the ascarides. In the right lobe there were three similar dilatations and all filled with the ascarides.

During life there were no symptoms which pointed to the presence of the ascarides.

#### SOME NON-MEDICAL SUGGESTIONS IN THE THERAPEUTICS OF EPILEPSY.<sup>3</sup>

Probably no morbid condition repays wise management better or quicker than epilepsy. The ideal home for the epileptic cannot be in the house of his parents for many reasons. Many cases must be removed to an asylum, such as the Craig Colony of New York State, if they are to receive the care they require.

The ideal home of the epileptic must be equipped with a gymnasium and a system of baths, especially the so-called "rain-bath," which is perhaps the best and only one needed; the value of the Turkish or Russian baths has not yet been determined. Next in importance, as additional resources, are methods of employment, such as all light trades, broom and brush making, wire working; besides, if possible, the manifold duties of the farm. An epileptic who is interested and employed will have fewer spasms, all things being equal, than an unemployed one whose time is principally taken up in contemplation of his unfortunate and well-nigh hopeless condition, albeit, he may be under medical treatment.

Over-eating is almost universal among these unfortunate, especially when feeble-minded. It is neces-

sary to teach them to eat properly. Coincident with regularity in evacuations of the bowels and free flushings of the kidneys, is noticed a striking diminution in the frequency and severity of the spasms. With the disappearance of the unhealthy development of adipose tissue and the general clearing up of the symptoms of over-feeding, is seen usually a brightening up mentally; and all this without the use of bromides or other medicines aside from cathartics and the free use of water, internally and externally.

Epileptics are prone to suffer from obstinate constipation, which is extremely difficult to overcome by ordinary treatment. The acne of those who are taking the bromides constantly is in many cases due as much to irregular action of the bowels as to any direct effect upon the skin by the drug. This constipation, skin trouble and depression seen in some cases where larger doses of the bromides are being given, may be cured in most cases by gymnastic and other active exercise, and there is rarely a case so stubborn that it is not at least benefited.

That diet and exercise are but subsidiary means in the treatment of epilepsy must be admitted; that they are valuable corollaries to such drugs as may be prescribed, is equally true. But unless properly prescribed and administered, their therapeutic value diminishes. The older and chronic cases are beyond cure and almost beyond amelioration. There are many children who might be cured if taken in time, removed from home environment and placed under discipline, carefully studied physically and mentally, thoroughly drilled in exercises calculated to increase muscular development and to develop muscular control, with less attention paid to teaching book knowledge and more attention paid to training in habits of obedience and decorum. Certainly the care of the incurable would become a simpler problem.

It may be reasonably concluded that diet and exercise are important auxiliaries in the treatment of epilepsy; that diet should be, as the term implies, food prescribed by a physician; that an extreme opinion either for or against a dietary consisting entirely of nitrogenous matter or, on the other hand, strictly vegetable, is entirely wrong. A middle opinion, which will give the patient thorough study and afterward arrange the diet according to the patient's needs, is the proper theory. Exercise should also be prescribed by a physician and followed out under his eye as far as possible, particular attention being given to exercises calculated to develop respiratory action, strengthen the heart and generally promote muscular control.

#### VARICELLA OF THE LARYNX; SUFFOCATING VARICELLOUS LARYNGITIS.<sup>4</sup>

CASE I. A boy of three years was admitted with the symptoms of croup, having been ill three days. The throat was red, and the tonsils slightly swollen. No membrane present in nose or throat. Injection of anti-diphtheritic serum had no effect upon the dyspnea. Two days after the first observation, three or four small papules were noticed on the hand, neck and abdomen. The following morning the child appeared to be much worse, and tracheotomy was performed. No membrane was found. The efflorescence had spread, and became characteristic of varicella; but at no time did more than ten or twelve lesions exist. It was

<sup>2</sup> Krausnebejew: Jahrbuch f. Kinderheilkunde, 1895, B. xl, H. 2, 3; Archives of Pediatrics, March, 1896.

<sup>3</sup> Fort, S. J.: Journal of American Medical Association, 1895, vol. xxv, No. 26; Archives of Pediatrics, March, 1896.

<sup>4</sup> Marfan and Halle: Rev. Mens. des Maladies de l'Enfance, tome xiv, No. 1; Archives of Pediatrics, April, 1896.

learned that the patient's younger brother (at home) was attacked by varicella at this time.

Tubes inoculated from the throat, and also from the trachea, showed no colonies of the Löffler bacillus. The temperature throughout ranged from 37.6° to 39° C, and the canula was removed three days after the operation. Recovery was complete.

CASE II. A male infant, nine months old, covered with a characteristic and very confluent varicella efflorescence, showed very pronounced supra- and infra-sternal recession, but no trace of asphyxia. The throat contained neither pseudo-membrane nor varicella papules, and there was nothing in the lungs to account for the marked difficulty in breathing. There was a hoarse cough. After two days the dyspnea disappeared, without operation. No colonies of Löffler's bacillus were found in tubes inoculated from the throat. Anti-diphtheritic serum had been injected soon after admission.

The varicella efflorescence disappeared, but the child died of acute diarrhea and broncho-pneumonia eight days after he had first been seen. At the autopsy, an ulcer was found in the larynx, situated upon the posterior portion of the right lower vocal cord; it was as large as a lentil, round, and involved the mucous membrane only.

In both of these cases varicella of the larynx caused stenosis, the symptoms of which resembled those of true croup. The only other case of varicella of the larynx published up to this time was accompanied by spasm of the glottis without symptoms of laryngitis (Ollivier and Boucheron's case).

The laryngeal lesion of varicella usually appears early, either at the onset, or very shortly afterward. This fact is an aid in differentiating from laryngitis due to secondary infection, although only a bacteriological examination can justify the exclusion of a co-existing diphtheria.

#### CIRRHOSIS OF THE LIVER IN A CHILD.<sup>5</sup>

The author reports the case of a child, six years old, who had been under his observation for three years. The liver extended to two inches below the umbilicus. The abdominal veins were dilated and the spleen was enlarged. Ascites was present to such an extent that tapping had to be performed thirty-six times in the course of the year. There was neither albuminuria nor icterus. The child died with pleurisy. Upon autopsy, adhesions were found everywhere, the left pleura to the pericardium, the stomach to the liver. The peritoneum was thickened, and the abdominal cavity filled with ascitic fluid. There was perihepatitis and perisplenitis. Microscopically, the liver showed interstitial hepatitis.

#### THE TREATMENT OF HYPERTHERMIA IN CHILDREN.<sup>6</sup>

The author reports a series of cases treated by apolysin. He believes that fever does not, as a rule, require antipyretic treatment unless it ranges very high, or unless the child seems seriously affected by it. The diseases selected for observing the effect of the new drug were chiefly pneumonia, typhoid fever, rheumatism and measles. Five grains may be given to a child one year old, to be repeated every two or three hours. If no effect is observed after two or

three doses, the amount may be doubled. As a rule, however, five grains are sufficient at one year, with one grain added for each additional year. It may be administered with sugar, or may be made into suppositories and administered per rectum. The author observed no disagreeable effects whatever. The drug was well tolerated by weak stomachs. No subnormal temperature was noted. Fever was reduced with ease, the pulse showing no change in rhythm or frequency. The drug was administered to 38 cases, eight of which are reported in detail.

#### DIAGNOSIS OF PULMONARY TUBERCULOSIS IN INFANCY BY MEANS OF TUBERCULIN INJECTIONS.<sup>7</sup>

The author alludes to the importance of an early diagnosis of tuberculosis in infants both for the infant's sake and other members of the family. The diagnosis is often difficult or impossible from the general symptoms. The injection of tuberculin is the only means of making a certain diagnosis. Injections of one-twentieth of one milligramme, given subcutaneously, are followed by a pathognomonic reaction in cases of tuberculosis. In twenty cases subjected to this test by the author the reaction was never severe. The symptoms consisted of dryness of the mouth, headache, redness of the face and a feeling of constriction in the chest. In view of these facts, the author concludes that the prudent employment of this means of diagnosis will give good results as regards prophylaxis and early treatment of pulmonary tuberculosis.

## Reports of Societies.

### ASSOCIATION OF AMERICAN PHYSICIANS.

ELEVENTH ANNUAL MEETING, WASHINGTON, D. C., APRIL 30, MAY 1 AND 2, 1896.

(Concluded from Vol. CXXXIV, No. 26, page 650.)

#### SECOND DAY. — CONCLUDED.

#### IDIOPATHIC OSTEOPATHY IN INFANCY AND CHILDHOOD,

by DR. J. P. CROZER GRIFFITH, Philadelphia.

Osteopathy, or fragilitas ossium, is a comparatively rare condition at any time of life, or dependent upon any cause. It is far most frequent in advanced years, and is then due to an atrophy of the osseous structure. At other periods of life it may be symptomatic of other affections, such especially as certain nervous diseases, osteomalacia, rickets, etc.

There are still a number of cases remaining which may be called idiopathic, since they can be traced to no recognizable cause, and, as most of them are not associated with any atrophy or other visible pathological alteration of the bone. Some of these occur in youth and adult life, but the writer confines himself to those developed in early years and reports a case in point.

This was a boy who had several fractures, occurring at or soon after birth, and who, up to the age of two years, had suffered in all seventeen or eighteen fractures. The slightest cause was sufficient to produce them, and it was necessary to keep the child upon a stretcher, so great was the fragility of the bones. The general health of the subject was good,

<sup>5</sup> D'Espine: *Jahrbuch f. Kinderheilkunde*, B. xl, H. 2, 3; *Archives of Pediatrics*, April, 1896.

<sup>6</sup> Fischer, Louis: *Medical Record*, 1896, vol. xlix, No. 8; *Archives of Pediatrics*, May, 1896.

<sup>7</sup> Gaffie: *Thèse de Paris*, 1895; *Rev. Mens. des Maladies de l'Enfance*, tome xiv, Mai, 1896.

and there was no constitutional affection in him or in his parents which accounted for the condition.

The writer then reviews the cases of unusual fragility in infancy and childhood of an idiopathic nature, which have been reported in medical literature, and discusses the etiology, pathology, diagnosis and treatment, so far as it is possible with the little light which the reports shed upon the subject. The cause is, as the title indicates, unknown. With regard to pathology and diagnosis, the writer discusses briefly the relation of the disease to rickets, to osteomalacia, and to imperfect osseous development, the latter as especially exemplified in some of the reported instances of multiple intrauterine fractures. The disease may, and probably does, bear a certain relation to these pathological conditions, but it is distinct from them. Certainly, in his opinion, it is not at all of a rickety nature, although it may sometimes be combined with rickets.

DR. H. M. LYMAN related the case of a young man, about twenty-five years of age, who had had thirty-three different fractures of the long bones of the extremities and clavicles. With advancing years the tendency to fracture had diminished. One of the tibiae was translucent, and transmitted light similar to a hydrocele. The man seemed in perfect health otherwise.

DR. J. H. MUSSEY asked regarding the quantity of urine passed by Dr. Griffith's patient. He had observed polyuria in cases of rickets and in a case of carcinoma of the bone.

DR. A. H. SMITH commenting upon the fragility occurring in advanced age mentioned an autopsy made by him on a patient one hundred and eleven years of age. The ribs were so soft that they were cut with an ordinary pair of scissors. There had been no fractures.

DR. H. A. HARE said he was acquainted with the parents and grandparents of Dr. Griffith's case and they were of unusually good bony formation.

DR. J. P. C. GRIFFITH thought that the condition found by Dr. Smith in his aged patient was one that probably takes place frequently, the atrophy of advancing years. In the cases reported in his paper there was no atrophy and nothing to account for the fragility either chemically or microscopically. The urine had not been examined in this case.

#### PAINFUL POINTS IN GOUTY, COMPARED WITH RHEUMATIC, ARTHRITIS.

by DR. W. H. THOMPSON, New York.

The localization of painful points in gouty arthritis is of diagnostic value, as shown by statistical observations to be submitted. Thus in all diarthritic joints the painful points in gouty inflammation are, with certain specific exceptions, on the condyles.

DR. H. M. LYMAN had recently received a volume from Sir Wiloughby Wade, of Birmingham, Eng., in which this lateral tenderness in the vicinity of gouty joints was emphasized. He explains it by supposing that the nerves are inflamed as a part of the gouty process and is not so much inclined to implicate the periosteum.

DR. THOMPSON thought there was a mistake with reference to the nerves, for on the condyles the nerves are not especially distributed and this supposition would not explain the difference between gout and rheumatism.

#### HABIT CHOREA,

by DR. WHARTON SINKLER, Philadelphia.

Gowers considers the term "habit chorea" a misnomer, and regards the affection as a form of spasm or tic rather than a variety of chorea. Several other writers hold the same view. The author believes that the affection is a true chorea. The differences of opinion as to the disease are mainly due to the fact that there are two varieties of habit chorea. The first is one in which the disease is evidently the result of a trick or habit in child or adult, while in the second class the result is due to some predisposing cause, such as is operative in the production of Sydenham's chorea. Of 1,059 cases of chorea treated at the Philadelphia Infirmary for Nervous Diseases in twenty years, 148 cases were instances of habit chorea. The one drug that seems to exert a special influence on the disease is arsenic in ascending doses. Rapid improvement frequently takes place when the patient is put to bed.

DR. WM. OSLER thought the opinion expressed in this paper was a step in the wrong direction. We have learned of late years to separate the habit spasm from the true chorea. The work done by the French school in this respect is first class, and should be followed very closely by the students of neurology in other countries. While there are many cases in which the diagnosis is difficult, yet in the large majority of cases the two affections can be separated from each other. In habit spasm the character of the spasm is often entirely different. The cases last a longer period of time and rarely, if ever, are associated with endocarditis. There are curious psychical phenomena in habit spasm not seen in Sydenham's chorea—the echolalia, the coprolalia and the various forms of obsession. It makes no particular difference what the disease is called, whether chorea or habit spasm, but it does make a difference whether or not they are regarded as related.

DR. J. J. PUTNAM seconded what Dr. Osler had said. Dr. Prince, of Boston, has described a form of trouble which he calls an association neurosis. It is spoken of usually as being a sensory affection which has persisted after the pain or sensory cause has disappeared. The origin of the habit chorea seems to bring it into the same general category.

DR. S. WEIR MITCHELL thought the name of the affection did not differ materially. He was glad to have been able to discriminate this group as apart from others. He had seen cases of chorea leave children with habit spasm, and had seen habit spasm pass into a condition of chorea minor.

DR. A. JACOBI said that the majority of cases of partial chorea and habit spasm principally occurring upon the face are the result of chronic nasal and pharyngeal catarrh. Most of them are seen in children below ten years of age. Nine out of ten cases get nearly well simply through local treatment of the nose and naso-pharynx.

#### ON A METHOD OF RELIEVING TIC DOULEUREUX,

by DR. CHARLES L. DANA, New York.

The method consists in the following procedure: (1) the hypodermic injection of massive doses of strychnia; (2) the administration of eliminants, such as iodide of potassium, and of tonics, including large doses of tincture of iron; (3) rest in bed, with light diet and diluents. The strychnia is given in single daily doses

hypodermically, beginning usually with one-thirtieth of a grain and slowly increased until by the tenth or fifteenth or twentieth day one-sixth to one-fourth is given. A series of cases including two women and four men were thus treated. The ages ranged from forty-three to seventy-three years. The duration of the malady before treatment averaged six years. Relief was obtained in all but one. The duration of relief in five cases had been from one and a half to two years. The doses of strychnia in all cases reached one-fourth to one-fifth of a grain. The large doses often have a decided anodyne effect, quieting the patient for hours like a dose of morphine. Sometimes the large doses temporarily increased the pain, but this is rare. The best results were in those who felt the anodyne effects.

DR. J. J. PUTNAM said he would be glad to try the new method. He had been moderately successful with aconitia. In those cases due to neuritis he thought operation was indicated.

DR. JANEWAY spoke of the uncertainty of securing reliable aconitia. When a good article was obtained it often had a beneficial effect on tic douloureux.

DR. WHARTON SINKLER was inclined to think that the accessory hygienic measures mentioned by Dr. Dana, such as keeping the patient in bed at an even temperature and away from worry, would in themselves benefit the patient greatly.

DR. H. A. HARE asked if, when these massive doses of strychnine were kept up for a period of two weeks, there were any conditions of irritability of the nervous system as shown by mental disorders.

DR. S. J. MELTZER inquired if the effect of the injection had not been one of suggestion. He had succeeded in two cases with injections of antipyrine.

DR. DANA thought that the element of suggestion might have something to do with the results. He did not pretend to explain, but he got the results stated. He had never seen any ill effect or peculiar effect upon the mind. There is a slight increase in the muscular irritability, but not much. Regarding the matter of rest, he considered it most important; still one or two cases got well without taking much rest. It is hard to get good aconitia, and even when it is secured it will not always do good to the patient. Most of the patients treated by Dr. Dana had been hammered away at with all kinds of drugs before receiving the treatment indicated.

#### THE RELATIONS OF MIGRAINE TO NEURALGIAS OF THE FIFTH NERVE,

by DR. J. J. PUTNAM, Boston.

Migraine is usually considered as a neurosis *sui generis*, and as quite distinct from neuralgia. The author wished to show that it stands in a much closer relationship to neuralgias of the fifth nerve, especially the ophthalmic division, than to other neuroses, and that this relationship is much closer than is usually admitted. Several points of analogy between these two affections are pointed out, both as regards the character of the pain, the course of the disease and the attacks, and the prodromata. It is shown that the two forms also tend to occur in the same family, and in the same individual, as a matter of substitution.

The following questions were then considered: What do we mean by neuralgia, and by migraine? what distinctions can be made between the different forms of neuralgia of the fifth nerve? can any general

definition be found for these painful affections which will indicate the relationship between the neuralgias, the visceralgias, the periodical headaches and migraine? Is there any definite relation between the pain and its seat? Finally, the clinical history of "typical, recurrent, supra-orbital neuralgia," "brow ague," "intermittent frontal headaches" (different names for the same affection) are considered.

DR. W. H. THOMPSON stated that for a number of years he had treated migraine and periodical neuralgias with free doses of ergot with favorable results.

DR. M. H. FUSSELL was inclined to think that these neuralgias are of malarial origin more often than is generally supposed. Probably in very few cases have plasmodia been searched for. Dr. Johnson, of the Soldiers' Home, Virginia, had recently found plasmodia present in a number of cases of supra-orbital neuralgia of periodical character.

DR. JANEWAY asked why these cases should not be regarded as probably of malarial origin when they are relieved by quinine and arsenic.

DR. PUTNAM said that following the suggestion in an article published by Dr. W. H. Thompson he had used ergot in a case of neuralgia of the second branch of the fifth nerve with excellent results. Regarding malaria, he did not deny that it sometimes has its effect, but he could only trace a malarial history in two cases.

DR. S. WEIR MITCHELL spoke of the peculiar chroual relations of neuralgia. Neuralgias of some branches of the fifth nerve tend to recur about eleven o'clock in the morning. The exacerbations in cases of sciatica are more apt to occur about one or two o'clock in the morning.

#### THE VIRULENCE OF THE DIPHTHERIA BACILLI OCCASIONALLY FOUND IN THE THROAT IN CASES PRESENTING THE CLINICAL FEATURES OF FOLLICULAR TONSILLITIS,

by DR. H. M. BIGGS, New York.

When cultures, made from the throat secretions of cases presenting the clinical features of follicular tonsillitis, show the presence of morphologically typical diphtheria bacilli, tests for virulence made on guinea-pigs almost invariably show that the bacilli are virulent.

DR. W. H. WELCH agreed with Dr. Biggs that all diseases of the throat in which the Klebs-Löffler bacillus is present and active are to be called diphtheria, whether they present the usual anatomical and clinical evidences of diphtheria or not. There is no way in which the physician can determine whether these non-membranous cases are genuine diphtheria otherwise than by bacteriological examination, but he can feel reasonably safe in his diagnosis if there is the usual membranous character of diphtheria and it is a primary inflammation of the throat, for the Klebs-Löffler bacillus is present in 90 per cent. of such cases.

DR. S. J. MELTZER thought that in the light of experience it would not do to say that because no Löffler bacillus was found that diphtheria did not exist. He mentioned a case that occurred in Koch's laboratory where for two weeks the bacillus was looked for in vain and yet ultimately found. It is not satisfactory to say that where the bacillus of diphtheria is found the person has diphtheria, because there are plenty of healthy persons having bacilli in their throats. A person cannot be considered to have

pneumonia because he has the diplococcus in his mouth. We need two points for diphtheria—a lesion and a bacillus.

DR. A. JACOBI questioned whether the New York Board of Health was correct in claiming that every case in which there was a Klebs-Löffler bacillus in the mouth should be isolated and prevented from going about and attending to business. It is frequently unnecessarily cruel. Probably many of the physicians present had the bacilli in their mouths without ever having had diphtheria or being in danger of developing it.

DR. BIGGS did not want to be understood as saying that where bacilli were present in the throat that would constitute diphtheria. There must be an inflammatory process with it to constitute diphtheria. Diphtheria is an inflammatory process of the mucous membrane produced by the diphtheria bacillus; whether membrane is present or not is immaterial. As to the failure to find bacilli in some cases where they should be present, that has been noted by all observers; but a properly made culture does show the bacilli in the vast majority of cases.

In regard to the frequency with which diphtheria bacilli are to be found in normal throats, he thought Dr. Jacobi was wrong. In a large series of examinations, including cases in dispensaries, only in about one per cent. of the normal throats were the bacilli found. Where diphtheria bacilli are found in normal throats you may almost certainly say that the persons in whom they are found have been in close contact with diphtheria. Such contact as simply attending a case of diphtheria by a physician does not usually lead to the presence of the bacilli in the throat.

The question of the sanitary management of diphtheria during convalescence is one of the most difficult problems in sanitary work and one which has yet to be solved.

#### PREVALENCE AND FATALITY OF PNEUMONIA,

by DR. C. F. FOLSOM, Boston, was read by title.

#### PROGNOSIS IN PNEUMONIA,

by DR. ANDREW H. SMITH, New York.

Prognosis as affected, first, by pre-existing conditions, such as age, sex, habits, etc.; second, as affected by conditions arising during the progress of the disease, such as chill, temperature, amount of lung implicated, complications, etc.; illustrated by statistics of cases at Presbyterian Hospital, New York. Prognostic indications derived from the pulmonary second sound. Ditto, from leucocytosis.

DR. M. H. FUSSELL asked if Dr. Smith had made any observations on the effect of pregnancy on the death-rate in pneumonia. Three cases observed by him the past winter, all young women under thirty-five years of age, terminated fatally.

DR. S. J. MELTZER desired to know if bacterial investigations had been made; whether the pneumonias were due to the diplococcus lanceolatus or whether there were complications with the streptococcus. Probably those cases due to the diplococcus lanceolatus would terminate more favorably if the temperature ran high because it is destroyed by a temperature of 41 C.

DR. W. H. THOMPSON had seen three cases of pneumonia in pregnant women, and all got better. The presence of herpes had always been regarded as

a favorable sign, and it had seemed to be so in his cases.

DR. H. A. HARE was convinced that in a large number of diseases, and particularly in pneumonia, fever is actually a protective process on the part of the body. Besides this, the processes developing the heat are useful in destroying the toxins, in addition to being deleterious to the micro-organisms themselves. The fever, moreover, seems to aid in the development of leucocytosis.

DR. W. H. WELCH thought that the bacteriological examination of cases of pneumonia gives no information of any value in the way of prognosis. All cases of genuine lobar pneumonia, in his opinion, are due to the micrococcus lanceolatus. If the streptococcus is present in the sputum there is no evidence that it is doing anything in the lung. The essential factor in croupous pneumonia is the poison produced by the micro-organism, and the influence of the poison on the heart and other parts of the body. There is as yet no satisfactory bacteriological basis for the conception of the protective influence of fever. This conception rests upon nothing more than ingenious argument. The micrococcus lanceolatus grows at a temperature of 40–41 C. Above that it ceases to grow, but is not killed. Its virulence is not materially changed by remaining for a considerable time at temperatures of 40–41 C.

DR. A. H. SMITH said that he had not had an opportunity of studying cases of pneumonia in pregnant women. He thought too much stress had been laid upon temperature in pneumonia. Forcing down temperatures by chemical means simply blinds our eyes. If attempted at all it should be by the cold bath. If the fever is high but the duration not great, it is better to let the question of temperature alone.

#### THIRD DAY. — MORNING SESSION.

#### A CASE OF ESOPHAGEAL HEMORRHAGE, WITH CIRRHOSIS OF THE LIVER,

by DR. G. M. GARLAND, Boston.

The author reported a case which came under his own observation, and a case sent to him by Dr. Osler of Baltimore, and one by Dr. Councilman of Boston. Up to ten or twelve years ago esophageal hemorrhage as a complication of cirrhosis was practically unknown. The manner of dilatation of the esophageal veins is by an attempt of the overloaded portal circulation to empty itself, to escape around the liver by passing along the veins of the lesser curvature of the stomach and working up into the deep veins of the esophagus. It has been noted that in these cases the hemorrhages may continue for a long time, and there may be apparent intervals of recovery. In the case reported by the author the welling up of blood from the esophagus was a marked symptom; it occurred while the patient was lying quietly in the bed.

DR. GRAHAM related a case of hemorrhage from varicose veins of the esophagus not due to cirrhosis of the liver. The hemorrhage followed the lifting of a heavy weight, and at post-mortem was found to be due to varicose veins of the esophagus.

DR. S. WEIR MITCHELL related the case of a child which died from hemorrhage, and post-mortem examination revealed two or three dilatations of the esophageal veins just above the opening into the stomach, and about ten to fifteen of such dilatations in the

stomach. There was no disease of the liver and no other discoverable lesion.

DR. A. JACOBI thought that the dilatation of the veins, as such, is no reason why a vein should burst. There must be some structural change in the vessel wall along with the dilatation to account for the rupture. He suggested that in future cases the structure of the vessel walls be more carefully studied.

#### ON ABSORPTION IN THE STOMACH.

by DR. S. J. MELTZER, New York.

Recent investigations have brought to light some new facts with regard to the power of absorption in the stomach, the most striking of which is surely the unexpected result that the stomach does not absorb any water. The author's paper dealt with experiments on rabbits with strychnine nitrate and hydrocyanic acid. Six to ten milligrammes of strychnine brought into the full stomach of a rabbit with pylorus open is sure to bring on a tetanus within a very short time. The effect is probably brought about by the strychnine soon entering the intestines from where it becomes absorbed in a few minutes. When the pylorus is closed, even such large doses as 200 milligrammes of strychnine, remaining for hours within an empty stomach with good circulation and with intact innervation of the vagi, does not produce any effect at all. The mucous membrane of the stomach does not absorb even the slightest fraction of the strychnine.

The mucous membrane of the esophagus also absorbs strychnine very poorly. The pharynx is apparently the part of the alimentary canal which absorbs best. Three to four milligrammes in the pharynx will cause a tetanus in three to four minutes. The rectum absorbs nearly as well as the pharynx, and better than the small intestine.

Prussic acid is absorbed very well from the stomach, even when the pylorus is ligated. It seems to produce a hemorrhagic surface on the mucous membrane which facilitates the absorption. Possibly its absorption is due to its volatility, as gases seem to become readily absorbed in the stomach.

DR. A. JACOBI said that clinical observations tended to confirm part of Dr. Meltzer's experimental results. Morphia, for instance, will show its effects much later if given internally than if allowed to absorb from the mouth. A few drops of Majendie's solution introduced into the mouth without the addition of water will have an effect within a very few minutes.

#### DISPENSARIES AND THEIR USE IN TEACHING,

by DR. M. H. FUSSELL, Philadelphia.

This paper called attention to what appears to be the best method of utilizing for teaching-purposes the patients who attend the out-door service of the hospital connected with a medical school. The method described is that used at the Hospital of the University of Pennsylvania, and was that inaugurated by Professor Tyson. The service is in charge of a chief and four assistants—two clinical assistants, a recorder and a microscopist. Each class of students is subdivided into sections in the charge of an instructor in clinical medicine. Each section comes in turn to the dispensary, where the section is divided into two groups and each group given a patient to examine. After the students have made their diagnosis the instructor goes over the case with them, corrects mistakes and revises treatment.

#### MESCAL BUTTONS (ANHALONIUM LEWINII),

by DRs. D. W. PRENTISS and F. P. MORGAN, Washington.

The mescal button is a drug that has been used by the Indians in the valley of the Rio Grande in their religious services. They eat this button, and sit and dream and sing songs and make prayers all night. They commence this about seven o'clock in the evening and keep it up till ten or eleven o'clock the next day. During this time they take no food. Professor Mooney has eaten the mescal button with them, and is familiar with its effects. He brought some home, and Dr. Morgan has been experimenting with them by giving them to the medical students. The effect produced is almost uniform. The most marked effect is in producing hallucinations of color visions. It does not produce sleep or unconsciousness but rather wakefulness. The color visions only appear when the eyes are closed. They are various and constantly changing, and are of a very beautiful description. During the time the individual is under the influence of the drug he is perfectly conscious and can describe his visions. No unpleasant effects have ever been observed. Dr. Prentiss exhibited the cactus from which these buttons are prepared. The buttons probably have some medicinal value, and have been used by some physicians in the West for various disorders.

#### SYPHILITIC NEPHRITIS,

by DR. H. A. LAFLEUR, Montreal, was read by title.

The following new members were elected: Isaac Adler, New York; J. J. Abel, Baltimore; Walter Reed, U. S. Army; D. B. Stewart, Philadelphia.

Officers for the coming year were elected as follows: President, J. M. DaCosta; Vice-President, F. C. Shattuck; Recorder, I. Minis Hays; Secretary, Henry Hun; Treasurer, W. W. Johnson; Councillor, I. E. Atkinson.

After a complimentary speech by Dr. Graham a vote of thanks was tendered to the retiring President. Dr. Jacobi acknowledged the courtesy in fitting terms.

### Recent Literature.

*Superficial and Surgical Anatomy.* By PROF. G. D. THANE and PROF. R. J. GODLEE. London, New York and Bombay: Longmans, Green & Co. 1896.

This little volume is an appendix to the tenth edition of "Quain's Anatomy," that is at length complete. We have only to say that it is excellent, and will undoubtedly be very popular. Here and there we find statements to criticise, but the tenor of our remarks must be all for praise. Most readers will, we imagine, turn first to the sections on the relations of brain and skull. They will not be disappointed. The aural surgeon will be pleased with the treatment of the mastoid, the tympanum and the applications to the surgery of that interesting region. We are inclined to question the accuracy of the relations of the pleura in the sternal regions as here stated. There is an elaborate table of the relations of various structures to the levels of the bodies of the vertebræ. There are special chapters on the anatomy of hernia and of the perineum. Several of them are new, and most of the illustrations are excellent. We understand that the book is to be obtained separately. T. D.

THE BOSTON  
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THE PRESENT STATUS OF DIPHTHERIA  
ANTITOXIN.

NEARLY two years have passed since Roux reported his successful use of Behring's antitoxin in the treatment of diphtheria. His figures were carefully prepared and convincing, yet he admitted himself that a larger number of cases under varied conditions was needed to form a final judgment. The period which has elapsed since then has seen the almost general employment of antitoxin in large hospitals and in private practice. The reports from hospitals have been published from time to time. They are now sufficient both in number of institutions and of cases to form the basis for a fair judgment. Leaving for the present cases in private practice which are notably not comparable to hospital series, do the hospital results confirm the hopes of Roux's figures?

At Buda-Pesth, it will be remembered, he reported 448 cases with a total mortality of 24.5 per cent. But of these, 20 died within twenty-four hours, not being given antitoxin; and 128 were bacteriologically not diphtheria. Of the 300 cases then remaining of true diphtheria, all receiving serum treatment, 78 died, a mortality of 26 per cent. During the same period of observation 520 children treated at the Trousseau Hospital without serum showed a mortality of 60 per cent.

Do our present hospital reports show similar and continued reduced mortalities? Dr. Joseph Winters, in a lengthy paper before the New York Academy, claims that they do not; that not only is the mortality increased by the use of the serum, but that there are more frequent and more serious after-effects. He bases his opinion upon the reports of several American hospitals and upon a personal visit to some of the chief fever hospitals of Europe. He argues that "it is owing to the increase in the number of cases of diphtheria in the various hospitals, and in the increase in the number of cases reported as diphtheria as the result of the bacteriological diagnosis in various cities of the world, that antitoxin is reputed to reduce the death-rate of diphtheria."

In support of his statement, that while the ratio is in some cases reduced the number of deaths is actually increased, he makes use of the statistics of the Boston City Hospital, where in 1893 there were 203 deaths, as against 207 in 1895. This he uses as an argument that antitoxin is not only ineffective but harmful, despite the fact that the death percentage was reduced from 48.44 to 13.21. He is apparently unwilling to accept the bacteriological diagnosis of the disease; for taking the reduced death-rate and actual reduction of numbers of deaths from the Willard Parker Hospital for the year 1894 (non-antitoxin) with 699 cases, 205 deaths, mortality 29.32, and 1895 (antitoxin year) with 778 cases, 190 deaths, mortality 24.42, he now says this reduction is due to the inclusion of bacteriological cases without marked clinical evidence. He says if all these cases were omitted the mortality would be about 38 per cent.

When for any reason figures point to even a slight increase of deaths, even if not relative to the increase of total cases, he says that is due to harmful serum; but wherever there is both actual and relative reduction of mortality, no matter how large, he claims it due to a probable mild form of the disease. He argues that those who favor antitoxin have taken care to compare single years of high death-rate when they should have included all; but he himself compares the death-rate of two London hospitals, the Southwestern and Northwestern, for three pre-antitoxin years, with all the hospitals for one year of serum therapy. He lays great stress upon the figures of intubation cases at the Willard Parker Hospital showing a mortality of from 68 to 75 per cent., but gives no figures to show the relative number of cases now coming to intubation compared with other years, a most needful comparison now that only the severer cases do come at all to intubation, and hence have the doubly high mortality.

Dr. Winters's paper is worth the reading, for a conservative view is always valuable; but, even by itself — taking his own arguments and only the figures given — it leaves one with the sense that he is filling the part of "advocatus diaboli," bound only to see the evil.

Touching upon the same figures from the Willard Parker Hospital, Dr. Brannan's discussion of Dr. Winters's paper is most helpful. He shows that not a few of the cases treated with antitoxin and proving fatal, as Dr. Winters claims directly because of the serum, had, on the contrary, a distinctly unfavorable prognosis at entrance. In the 19 fatal cases after serum in 1895 the prognosis at entrance was not favorable, as inferred from Dr. Winters's paper; but in the records given as good in six, doubtful in five, and bad in eight. Twelve were two years of age or less, and only five above three. Twelve had laryngeal stenosis requiring intubation; seven had besides pneumonia. Five of the non-laryngeal cases also had pneumonia. The single adult had impending delirium tremens at entrance. The increased diarrhea claimed



by Dr. Winters does not show, says Dr. Brannan, on the clinical charts of the hospital. The amount of stimulant used was found to be distinctly less during the antitoxin treatment.

Without entering further into the discussion between Dr. Winters and Dr. Brannan, there remains little ground for the former's objections to the serum therapy. Certainly, against his opponent or alone, he has not proven his case, save perhaps to his own satisfaction. Hospital figures when carefully studied in an unbiased manner can only point to the great efficacy of the antitoxin.

It has from the first been distinctly stated that the best effect of the serum was at the very start of the disease, that each day's delay was of great detriment, so much so that after the fourth day but little difference was made in the course of the disease by the administration of antitoxin. The well-known delay in cases coming under hospital care was at once pointed out as making hospital statistics of less value; and the more difficult and slowly accumulated figures of private practice have been waited for with no little interest.

The extensive and elaborate report of the American Pediatric Society published in our pages to-day is the answer to this question of the effect of antitoxin when given early in the disease. The report is based upon the replies to a circular letter sent by the committee to the members of the Society to reach as many physicians as possible who had had experience with the remedy. The circular letter asked for information upon the following points: Age; previous condition; duration of disease when the first injection was made; the number of injections; the extent of the membrane—tonsils, nose, pharynx and larynx; whether or not the diagnosis was confirmed by culture; complications or sequelæ, namely, pneumonia, nephritis, sepsis, paralysis; the result; and remarks, including other treatment employed, the preparation of antitoxin used, and general impression drawn from the cases. Six hundred and fifteen physicians sent answers which may fairly represent experience up to the first of May of this year. The large number of cases, the scattered sources of statistics, and the varying conditions of private practice and medical care in different parts of this country must go far to eliminate any especial error of a single epidemic or personal equation. The bacteriological confirmation of the diagnosis in nearly all the cases leaves no doubt as to the accuracy of resulting ratios.

The grand total of all cases (5,794) gives a mortality of 713, or only 12.3 per cent. Omitting 218 cases reported moribund at the time of injection, the mortality is but 8.8 per cent. Taking only the cases injected within the first three days, the mortality is 7.3 of all cases. Omitting from these those dying within twenty-four hours of injection, the ratio is further reduced to 4.8 per cent., which more than substantiates Behring's claim of a reduction of diphtheria mortality to five per cent. if treated on the first or second day.

Among all these cases there were but three in which the patient appeared to have been made worse by the serum.

The mortality of the 1,448 cases injected after the fourth day was only 27 per cent.

The results in the laryngeal cases was even more convincing of the value of antitoxin. In one-half of the cases no intubation was required, and of the 537 cases coming to operation only 25.9 per cent. died, a mortality less than half as great as ever reported by any other method of treatment. Broncho-pneumonia was noticeably infrequent, while nephritis or nervous disturbances were less than usual.

But beyond the mere facts of mortality is the striking impression made upon the minds of so many reporters of the great change in the picture of the disease under the new treatment. From all quarters are heard the comments, "I would never have believed it, till I saw this case"; "It is this case which converted me"; "In all my experience I never saw a more hopeless case, but it made a complete recovery."

To one who has not visited the diphtheria wards of a large hospital in former days and seen the saddening sight of prostrated, septic, dying children, the significance of the present spectacle of cheerful, brightened faces without distress, is hardly to be realized. Surely such reports from every side must carry full and convincing weight. Let the doubters read the report of the Pediatric Society.

#### MEDICAL NOTES.

**PROFESSOR OF PATHOLOGY IN RUSH MEDICAL COLLEGE.**—Prof. Edwin Klebs has been elected to the Chair of Pathology in Rush Medical College, which has recently been recognized by the Examining Board of the Royal College of Physicians and the Royal College of Surgeons of London, England.

#### BOSTON AND NEW ENGLAND.

**OVERSEERS OF HARVARD UNIVERSITY.**—Dr. David W. Cheever and Dr. George B. Shattuck were elected Overseers of Harvard University on Commencement Day, receiving respectively the second and third highest number of votes of all the candidates.

**HARVARD MEDICAL ALUMNI.**—The sixth annual meeting of the Harvard Medical Alumni Association was held in Boston June 23d: The business meeting was held in the Medical School at noon. Dr. George B. Shattuck was re-elected President, and Dr. Thorndike, Secretary. The other officers chosen were: Vice-Presidents, Gustavus Simmons, M.D., Sacramento, Cal.; Wotkyns Seymour, M.D., Troy, N. Y., and J. W. Parsons, Portsmouth, N. H.; Counsellors L. R. Stone, M.D., Newton; R. W. Lovett, M.D., Boston; and J. T. G. Nichols, M.D., Cambridge. It was voted to ask for a hearing before the Board of Overseers on the question of the extension of the franchise to graduates of the Medical



School not already alumni of the College. The dinner was held at the Vendome at one o'clock, 150 members being present. Dr. John Homans, 2d, read the report of the Committee on the Harvard Medical School. Speeches were made by Dr. H. P. Walcott, Dr. Charles McBurney, of New York, and Dr. Theobald Smith.

**HARVARD DENTAL ALUMNI ASSOCIATION.**—The twenty-fifth anniversary of the Harvard Dental Alumni Association was held at the Hotel Thorndike, Boston, June 22d. At the business meeting the following officers were elected for the coming year: President, Dr. Frank Perrin; Vice-President, Dr. J. T. Paul; Secretary, Dr. Waldo E. Boardman; Treasurer, Dr. Washburn E. Page; Executive Committee, Drs. Waldo E. Boardman, William P. Cooke, Harry S. Parsons. At the dinner in the evening the speakers were: Dr. James Shepherd, who spoke of the prosperity of the Association; the newly elected dean, Dr. E. H. Smith; Rev. Reuben Thomas, Harvey A. Shepard, Rev. Dr. Perrin and Mr. Colby.

**AN ETHER PRIZE FUND FOR THE BOSTON CITY HOSPITAL.**—The Trustees of the Boston City Hospital have received a gift of \$1,000 from Mr. Townsend W. Thorndike under the following conditions: "I wish to give \$1,000 to the Boston City Hospital to found the 'Herbert L. Burrell Ether Prize Fund,' from the interest of which a prize of \$20 shall be given semi-annually to the surgical house-officer who administers ether in the most skilful and humane manner. Only surgical house-officers of the Boston City Hospital shall be eligible in competition for it, the award to be made by three judges to be appointed by the superintendent of the hospital and senior surgeon. In case no officer is considered worthy of the prize, the interest shall be added to the principal. Should the principal increase to such an amount as shall be considered sufficient to warrant the offering of a second prize of lesser amount, such a second prize shall be established, and shall be known as the 'William H. Thorndike Ether Prize.'"

**AN LL.D. FROM YALE.**—At the Yale Commencement last week Dr. William H. Welch, of Baltimore, was given the degree of LL.D.

#### NEW YORK.

**A HOSPITAL TENT FOR CHILDREN.**—A commodious hospital tent, with a smaller tent adjoining for baths, closets, etc., has been fitted up on the grounds of Bellevue Hospital, which will be occupied by the children from the Marquand ward during the summer months.

**THE SECOND CONGRESS OF APPLIED CHEMISTRY.**—Prof. Charles A. Doremus, who sailed for Europe on June 27th, has been appointed by Secretary of State Olney to represent the United States in the Second Congress of Applied Chemistry, which is to meet in Paris during the coming month.

**A LARGE CONTINGENT FEE.**—The following curious notice has recently appeared in the newspapers:

**ONE MILLION DOLLARS REWARD.**—To Physicians, Surgeons, Scientists, Wise Men, and all others whom it may concern; Be it known that I, Charles Broadway Rouse, who possess considerable wealth, hereby agree to pay the sum of one million dollars to any human being who restores to me my sight.

Mr. Rouse is an eccentric New York merchant who is suffering from atrophy of the optic nerve. Some time ago he discovered that one of his former employees, a man by the name of Martin, was affected in the same way as himself. He took a great interest in his case and was very kind in securing the best medical treatment for him and otherwise providing for his welfare and comfort. Out of gratitude for this kindness he has offered to subject himself to any kind of treatment that is thought worthy of trial, and any one who believes that he has a chance of winning the million-dollar reward must first test the efficacy of his treatment on Martin.

**A SECRET REMEDY AT BELLEVUE HOSPITAL.**—Considerable comment has been caused of late by the setting apart, by order of the Commissioners of Public Charities, in spite of the protest of the medical board of the hospital, of one of the alcoholic wards of Bellevue Hospital for the use of a certain physician of New York, but not connected with the institution, who is to treat patients by means of a recent remedy, which he claims to have discovered. This physician is Dr. Isaac Oppenheimer, and the curious part of the matter is that up to the present time he has been a regular practitioner in good standing, being a graduate of the College of Physicians and Surgeons (in the year 1876), a Fellow of the Academy of Medicine, and a member of the Medical Society of the County of New York. In the only case that has thus far been made public of which Dr. Oppenheimer had charge, the patient, who had been transferred to Bellevue from the Harlem Hospital, died a few hours after his admission to the ward. In this case, however, the doctor claims that the man was suffering from an advanced stage of Bright's disease, and that he made no attempt to treat him with his new "cure."

**INCREASE IN THE MORTALITY RATE.**—The effect of the summer weather has shown itself in a considerable increase in the mortality, although the death-rate is by no means excessive for the season. During the week ending June 27th there were reported 859 deaths, against 750 in the week ending June 20th, and 703 in the week preceding that. Of the total number of deaths, 473 were in children under five years of age, an increase of 140 in this class over the week previous. The deaths from diarrheal diseases amounted to 166, and of these 155 were in children under five. The number of deaths from pneumonia declined to 52, which is probably the smallest mortality from this disease since last summer. There was a slight increase in the deaths from diphtheria, which numbered 40, and a slight decrease in those from scarlet fever, which numbered 6.

## METEOROLOGICAL RECORD

For the week ending June 20th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer			Relative humidity.			Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...14	30.01	54	59	49	92	100	98	N.E.	N.E.	24	28	R.	R.	1.04
M...15	30.18	53	57	49	86	88	87	N.	N.	13	4	O.	O.	.22
T...16	30.20	67	79	55	67	73	70	S.W.	S.W.	10	13	O.	O.	
W...17	30.10	68	76	60	75	73	74	S.W.	S.W.	7	13	O.	O.	
T...18	29.96	70	80	61	82	82	82	W.	S.W.	4	7	O.	O.	
F...19	29.96	77	89	65	65	51	58	W.	S.W.	8	10	O.	C.	
S...20	29.96	80	90	69	72	55	64	W.	S.W.	10	11	O.	C.	

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 20, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from						Measles.
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.			
New York	1,892,332	758	333	18.07	13.52	8.06	5.20			2.08
Chicago	1,678,967	418	163	24.00	10.08	18.96	1.20			—
Philadelphia	1,164,000	414	171	15.36	11.04	8.83	3.12			1.20
Brooklyn	1,100,000	—	—	—	—	—	—			—
St. Louis	560,000	—	—	—	—	—	—			—
Boston	494,205	181	62	11.55	14.30	.55	4.95			—
Baltimore	496,315	145	50	14.49	11.04	7.59	5.52			—
Cincinnati	336,000	103	35	13.72	15.68	5.88	4.90			1.96
Cleveland	314,637	91	35	20.85	9.81	8.72	5.45			—
Washington	275,500	121	68	20.75	11.62	16.60	.83			.83
Pittsburg	238,617	95	40	34.32	13.52	28.08	1.04			1.04
Milwaukee	265,000	—	—	—	—	—	—			—
Nashville	87,754	38	19	38.78	16.62	18.99	2.77			2.77
Charleston	65,165	—	—	—	—	—	—			—
Portland	40,000	—	—	—	—	—	—			—
Worcester	98,687	27	12	14.80	—	7.40	—			—
Fall River	86,020	52	30	40.32	7.68	38.40	1.92			—
Lowell	84,359	32	13	25.04	21.91	25.04	—			—
Cambridge	81,619	26	7	11.55	15.40	—	3.85			—
Lynn	62,335	24	6	12.48	8.32	—	8.32			—
New Bedford	55,254	22	6	12.45	12.45	4.18	8.90			—
Springfield	51,534	18	8	11.11	11.11	5.55	5.55			—
Lawrence	52,153	—	—	—	—	—	—			—
Holyoke	40,149	—	—	—	—	—	—			—
Salem	34,437	10	2	—	—	—	—			—
Brockton	33,157	11	4	—	—	—	—			—
Haverhill	30,185	7	0	14.28	14.28	—	14.28			—
Malden	29,706	6	0	—	16.66	—	—			—
Chelsea	31,295	7	2	28.56	14.28	—	14.28			—
Fitchburg	26,394	4	3	—	—	—	—			—
Newton	27,022	10	2	—	20.00	—	—			—
Gloucester	27,663	—	—	—	—	—	—			—
Taunton	27,093	8	4	12.50	12.50	—	12.50			—
Waltham	20,877	4	2	—	—	—	—			—
Quincy	20,712	6	2	16.66	16.66	—	—			—
Pittsfield	20,447	6	1	16.66	—	—	—			—
Everett	18,578	4	2	—	—	—	—			—
Northampton	16,738	—	—	—	—	—	—			—
Newburyport	14,554	—	—	—	—	—	—			—
Amesbury	10,920	—	—	—	—	—	—			—

Deaths reported 2,701: under five years of age 1,103; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 482, consumption 328, diarrheal diseases 295, acute lung diseases 258, diphtheria and croup 104, measles 26, typhoid fever 24, whooping-cough 22, scarlet fever 19, cerebro-spinal meningitis 9, erysipelas 3.

From typhoid fever Chicago 8, Philadelphia and Pittsburgh 3 each, Baltimore, Cleveland and Washington 2 each, Nashville, Lynn and Pittsfield 1 each. From whooping-cough Chicago and Philadelphia 5 each, New York and Nashville 4 each, Boston, Washington, Pittsburgh and Cambridge 1 each. From scarlet fever Boston 8, New York 6, Chicago, Philadelphia, Cincinnati, Bridge and Quincy 1 each. From cerebro-spinal meningitis

New York 6, Worcester 2, Chelsea 1. From erysipelas New York, Chicago and Boston 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,860,971, for the week ending June 13th, the death-rate was 16.7. Deaths reported, 3,473; measles 221, whooping-cough 117, diphtheria 69, diarrhea 65, scarlet fever 39, fever 80.

The death-rates ranged from 9.1 in Norwich to 24.3 in Manchester: Birmingham 15.1, Bradford 13.4, Cardiff 15.1, Croydon 14.1, Gateshead 12.7, Hull 18.4, Leeds 17.9, Liverpool 18.5, London 16.5, Newcastle-on-Tyne 18.9, Nottingham 14.9, Portsmouth 12.1, Sheffield 15.5, West Ham 15.4.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 20, 1896, TO JUNE 26, 1896.

MAJOR DANIEL M. APPEL, surgeon, is relieved from duty at Fort Porter, N. Y., and ordered to the new post near Little Rock, Ark., for duty.

CAPTAIN AARON H. APPEL, assistant surgeon, is relieved from duty as examiner of recruits at Chicago, Ill., and ordered to Fort Porter, N. Y., for duty.

Leave of absence for one month, to take effect about the 5th proximo, is granted CAPTAIN WALTER D. McCaw, assistant surgeon, Fort Ringgold, Texas.

Leave of absence for two months, to take effect on or about August 1, 1896, is granted MAJOR LOUIS M. MAUS, surgeon, Fort Sam Houston, Tex.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 27, 1896.

S. B. PALMER, assistant surgeon, detached from the New York Laboratory, June 29th.

GEO. ROTHEGANGER, passed assistant surgeon, detached from the "Independence," July 15th, and ordered to the "Oregon."

## OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE TWENTY DAYS ENDING JUNE 20, 1896.

MCINTOSH, W. P., passed assistant surgeon. To proceed from Louisville, Ky., to Cincinnati, O., to inspect unseaworthy property; then to rejoin station. June 13, 1896.

PERRY, J. C., passed assistant surgeon. Granted leave of absence for twenty days. June 20, 1896.

GARDNER, C. H., assistant surgeon. Order of May 27, 1896, directing him to report for examination, revoked. June 5, 1896.

BLUE, RUFERT, assistant surgeon. To proceed from San Francisco, Cal., to Angel Island Quarantine Station for duty. June 13, 1896.

## BOOKS AND PAMPHLETS RECEIVED.

Chest Drainage in Empyema. By J. J. Brownson, M.D., of Dubuque, Iowa. Reprint. 1896.

Fever in the Course of Bright's Disease and in Uremia. By Alfred Stengel, M.D. Reprint. 1896.

Neuritis Complicating Dislocation of the Shoulder and Elbow. By M. A. Veeder, M.D., Lyons, N. Y. Reprint. 1896.

Aseptolin; A Formulated Treatment for Tuberculosis-Septicemia, Malaria and La Grippe. By Cyrus Edson, M.D.

Curettage of the Uterus; History, Indications and Technique. By J. W. Ballantyne, M.D., F.R.C.P.E., F.R.S.E. Reprint. 1896.

An Improved Method of Diagnosing Diabetes from a Drop of Blood. By L. Bremer, M.D., St. Louis. Reprint. 1896.

Skin-Grafting and Transplantation of Flaps; A Consideration of the Various Methods; Report of a Case. By E. J. Mellish, M.D. Reprint. 1896.

Transactions of the American Orthopedic Association, Ninth Session, held at Chicago, Ill., September, 17, 18 and 19, 1895. Volume VIII. Philadelphia: Published by the Association. 1896.

Don'ts for Consumptives; or, the Scientific Management of Pulmonary Tuberculosis; How the Pulmonary Invalid may Make and Maintain a Modern Sanitarium of his Home, with additional chapters descriptive of How Every Consumptive Person may Apply the Forces of Nature to Assist and Hasten Recovery, and also How the Defects of Heredity may be Best Overcome. By Charles Wilson Ingraham, M.D., Binghamton, N. Y. February, 1896.

## Lecture.

### GANGRENE AS A COMPLICATION AND SEQUEL OF THE CONTINUED FEVERS, ESPECIALLY OF TYPHOID.<sup>1</sup>

SHATTUCK LECTURE FOR 1896.

BY W. W. KEEN, M.D., LL.D.,  
Professor of the Principles of Surgery and of Clinical Surgery, Jefferson College, Philadelphia, Pa.

(Concluded from No. 1, p. 6.)

#### II. SYMPTOMS OF GANGRENE.

THE symptoms of gangrene are marked and characteristic.<sup>2</sup> Let us suppose the case to be one of arterial embolism or thrombus. Towards the end of the fever, especially in the third week or early in convalescence, as weakness is giving place to strength and the brightest hopes of speedy recovery are cherished, sudden severe and persistent pain is felt. This may be at the seat of the impending gangrene, though perhaps more commonly it is in the obstructed artery, especially in the femoral, popliteal or tibial, and radiates thence to the periphery. It is followed by numbness, coldness, loss of sensation, and sometimes of motion, and in a short time discoloration and all the other usual evidences of gangrene appear. Sometimes, but not usually, these local symptoms precede the pain. If the vessels of the foot or at the ankle or even the popliteal be examined, the pulsation will be found feeble or utterly extinguished, while higher up at the seat of the obstruction the artery will be changed into a moderately firm but very tender cord in which we may sometimes differentiate the obstructed artery from the non-obstructed vein — an important point in prognosis. Week by week, sometimes day by day, the growth of the secondary coagulum may be traced upwards by the progressive abolition of the arterial pulsation and by the upward march of the gangrene. If old cicatrices from burns, or unhealed eczematous ulcers, old fractures or varicose veins exist, all *loci minoris resistentiæ*, they will be among the earliest parts to yield. Blebs may form in the early stages, but most frequently they will dry up and the parts will mummify, although as already indicated, moist gangrene may supervene if a large clot form much higher up or if, in addition to the artery, the vein also becomes extensively obliterated, thus involving great masses of moist tissue, such as the thigh, in sudden ruin.

As is generally seen in cases of dry gangrene, days or weeks will elapse, if the patient lives so long, during which nature as usual makes a powerful effort to rid herself of the dead parts by the establishment of a line of demarcation. On the establishment of this, the pain often ceases.

In case the primary obstruction is in the vein and it becomes obliterated, extensively and completely, by a thrombus or by a simultaneous venous and arterial thrombosis, then the gangrene will be of the moist instead of the dry variety. It will present the usual appearance of moist gangrene. The vessels at the seat of the obstruction will be very tender and can be felt as hard cords. The clot will extend sometimes rapidly and widely and the gangrene will be more ex-

tensive in the area involved and far more acute in its disastrous clinical course, as would naturally be expected.

In the variety of gangrene beginning in the peripheral vessels, the symptoms will vary somewhat. It is not so uniformly in the lower extremity, and is much more frequently symmetrical. If small in extent, pain is not apt to be a leading feature. The onset is often earlier, and from the nature of the case, its progress is more acute and its limits much more quickly defined, so that usually, within a few days at least, the boundary of the gangrene is well defined. Its area also is usually much less than in those cases in which a perceptible coagulum exists, not often extending in the leg beyond the foot or ankle; and if it occur in the nose, ears, genitals, etc., it rarely involves surrounding parts to a large extent. Sometimes, however, it may extend more widely, as in a case of typhus and starvation, mentioned by Lyons,<sup>3</sup> in which the patient walked to the workhouse, and on baring his chest the whole of the right side was "a dark, olive-green, jelly-like, tremulous mass." The abdominal wall is sometimes similarly involved. The probably irregular area in which the stasis of the blood will take place in this form, also accounts for the great irregularity generally seen in the line of demarcation; whereas, if a well-defined thrombus exists in a large vessel, the gangrene is apt to be fairly evenly bounded. This sudden history is usually followed by a speedily decided issue. Death follows quickly, or reaction and recovery set in within a short time, instead of long hanging in the balance.

In my Toner Lecture, I collected in all 113 cases of gangrene, to which Dr. Westcott has added 90, making 203 in all. Excluding from the former collection 34 cases of typhus reported by Estlander in Finland, of the remaining 169 cases, 115 followed typhoid fever and 40 typhus fever. Some of the latter were undoubtedly really typhoid. In the following *résumé* I shall combine the results of the former and the later series together.

The influence of age is not very marked. Of 140 cases, 26 appeared before fifteen years of age, 64 from fifteen to twenty-five, and 50 after twenty-five years of age. This will not differ much from the normal age-distribution of typhoid.

But sex seems to have a marked determining influence. Of 155 cases, 90 were males and 65 females, or about three to two.

The site of the gangrene is more striking than either age or sex. In six cases it attacked the ears, in 10 the nose, in 47 the face, neck and trunk; in five the arms, in 20 the genitals and in 126 the legs; that is, of 214 cases in which the location is stated, in 146 it was in the lower extremities and genitals, and in 16 more in such peripheral districts of the vascular system as the ears and the nose.

I have found in the two series 128 cases of venous coagula following typhus and typhoid, especially the latter, in which the site is stated. Only four cases involved the upper extremity alone, two of which were followed by gangrene. Two involved both arm and leg, but all the other 124 cases were limited to the lower extremities. Gangrene of both venous and arterial origin (including both thrombosis and embolism) form most frequently during or just after the period of greatest cardiac weakness, a weakness felt

<sup>1</sup> Delivered before the Massachusetts Medical Society, June 9, 1896.

<sup>2</sup> Partly quoted from my Toner Lecture.

<sup>3</sup> On Fever, p. 191.

most at such distant points as the legs. Of 41 arterial cases, 18, and of 107 venous cases, 40, occurred in the second and third weeks of the fever—that is to say, of 148 cases 58 (39.2 per cent.) occurred in the second and third weeks.

These figures, it seems to me, are most instructive. In discussing the pathology, I gave marked prominence to the sluggish peripheral circulation as a mechanical factor in the production of gangrene. Even though we admit in many cases the determining influence of the bacilli of typhoid, the striking clinical fact above established must be explained by any accepted pathology. If arteritis or phlebitis or emboli of cardiac origin, whether bacillary or not, were the sole or even the preponderating cause, then gangrene certainly should attack the upper extremities, the head, the neck and the trunk with far greater frequency than is seen by these statistics. Just as in gangrene from other causes, often of non-bacterial origin, such as ordinary senile and diabetic gangrene; or of bacterial origin, as in scarlet fever, measles and the other exanthemata, the legs suffer so much more than all the other parts of the body put together; so in typhoid gangrene the familiar rule holds good.

It is also in the lower extremities that venous thrombi causing phlegmasia alba dolens are most frequent in other diseases of microbic origin, as in puerperal fever, pneumonia, septicemia, pyemia and even in tuberculosis and malarial fever. In both classes of diseases arising from half-a-dozen or more different bacteria or entirely apart from any bacterial influence, the one striking fact is that the legs suffer far more frequently than all other parts of the body put together. It is, it seems to me then, good common sense and good pathological sense to seek for the efficient, the exciting, the actual cause determining the location of the thrombosis and the frequent gangrene in the legs themselves as legs, that is, as distal parts of the circulatory system.

The distribution as to left- and right-sided gangrene is very striking. In the early series, I did not make such a differentiation, but in the present series of 90 cases, I have found that of 46 cases of arterial gangrene, eight occurred on both sides, 19 were right-sided and 19 left-sided, showing an exactly even distribution. In the veins, however, the facts are strikingly different. Both sides were affected in only four; the right side alone in 10 and the left side alone in 38. This, as we know, is in accordance with the usual experience in other diseases. Why the left side should be so much more subject to gangrene due to venous obstruction, as also to phlegmasia alba dolens, than the right side has been a subject of speculation for many years. My own conviction is that the obstruction to the return of the venous blood by reason of the compression of the left common iliac vein where it passes under the right common iliac artery is the most potent factor, slight in itself it is true, but when the blood is in unstable equilibrium between fluidity and coagulation, this slight retardation is in most cases just sufficient to precipitate the coagulation upon the left rather than upon the right side.

The same predominance of the left over the right side holds good in cases of venous obstruction, and the same balance of the two sides in cases of arterial obstruction, when they are not followed by gangrene. Excluding three involving the Sylvian artery, all of which occurred upon the left side, producing right

hemiplegia,<sup>66</sup> and one of the right brachial artery, of the cases of arterial thrombosis without gangrene, six were right-sided and five left-sided, while four were bilateral. Of the cases of venous thrombosis without gangrene, three were bilateral, 13 right-sided and 31 left-sided, or combining together the cases of venous obstruction, whether followed by gangrene or not, seven were bilateral, 23 right-sided and 69 left-sided, while in arterial obstruction the bilateral cases number 12, the dextral 25 and the sinistral 24. This extraordinarily even distribution would seem to suggest that the cause in cases of arterial obstruction is much more frequently embolic than has been hitherto believed.

While the male genitals and perineum are attacked by gangrene occasionally, it is in women especially that we find the widest spread havoc. I have found in all 20 cases, of which 16 followed typhoid and four followed typhus. Fourteen cases were in young persons from seventeen to twenty-seven, except one child of five, and five women of thirty-two years of age and over. In 17 of these cases there was gangrene of the labia, extending sometimes to the perineum and the thigh.

The disorder manifests itself either as a distinct gangrene of the external genitals or by gangrenous ulcers forming in the vagina. The former occasionally is followed by complete closure of the vagina and retention of the menstrual flow as in a case reported by Martin,<sup>66</sup> in which sloughing of the upper vagina and the entire cervix uteri occurred. The vaginal ulcers appear usually on the posterior wall and lead occasionally to recto-vaginal fistula, as in two cases reported in my former table, one case of vesico-vaginal fistula in the present table reported by Schick,<sup>67</sup> and in the fourth, my own case, both recto-vaginal and vesico-vaginal fistulae occurred.

A résumé of this unique case, of which I quote the earlier part from my former lecture, is as follows:

Mrs. M. D. was under my observation in St. Mary's Hospital from 1873 to 1876, and is the only case I have found of both recto-vaginal and vesico-vaginal fistulae. Up to March, 1872, she was perfectly healthy, when, at the age of thirty-four, she had a severe attack of typhoid fever for four months, following exhaustive nursing during her husband's fatal illness also from typhoid. About the fourth week the labia minora sloughed away to a large extent and both water and feces passed by the vagina. In October, 1872, she was admitted to the hospital, under the care of my colleague, Dr. Grove, with two large vesical openings (separated by a slight bridge of tissue), which had destroyed the posterior part of the urethra and the floor of the bladder up to the uterus, and one rectal opening an inch in diameter, and one and a half inches above the anus. Dr. Grove operated on her three times unsuccessfully; once on the rectal opening by the rectum when he divided the sphincter, and twice by the vagina. From December, 1873, to December, 1875, I did nine operations. Thrice unsuccessfully I attacked the fistulae proper, when, becoming convinced that the attempt to close them was hopeless, with her entire consent after a full explanation of the consequences of the operation, I proceeded to close the vagina. At first I attempted to preserve and utilize the remnant of the urethra, which gave me great trouble and necessitated several operations; but at the twelfth operation, December 28, 1875, I gave up the attempt, excised the useless urethra

<sup>66</sup> For an important contribution to this rare sequel of typhoid see Oeler, Recent Studies in Typhoid Fever, Johns Hopkins Hospital Reports, Vol. v, and in the Journal of Nervous and Mental Disease, May, 1896, p. 295.

<sup>67</sup> Centralt. f. Gynäkol., 1881.

<sup>68</sup> Wien. klin. Woch., 1892, vi, 413.

and closed the entire vulval aperture by ten silver sutures. The operation was a complete success. At the time of the delivery of that lecture, nearly seven weeks after the final closure of the vulva, I stated that she defecated, menstruated and micturated entirely by the rectum, and without the slightest trouble. She rose usually once, sometimes twice, in the night, and micturated only five or six times during the day. My greatest fear was that the feces softened by the urine would pass into the vagina or bladder and give trouble, but up to that time at least, none had arisen, and she was happily rid of the annoyance which had continued four years. Soon after this, however, a small fistulous opening appeared in the cicatrix, caused probably by the feces. This healed after a thirteenth operation, and when my lecture was printed (May, 1877) she had remained entirely well for over fifteen months. In the last four operations, instead of the usual sigmoid female catheter to empty the bladder, I inserted the curved branch of a pocket-case male catheter into the bladder and the vagina through the recto-vaginal fistula, thus draining these cavities, while I drained the rectum below the eye of the catheter, by an ordinary drainage-tube inserted into the rectum, lest the feces should be softened by the urine and then pass into the vagina. They answered admirably. The difficulty in obtaining a cure, I believe lay partly in the inherent difficulty of the case, and partly in her deteriorated health ever since the fever.

Her later history is as follows :

Menstruation ceased in February, 1887, over eleven years after the closure of the vagina. December 11, 1888, she again came to me complaining of pain in her rectum and vagina and stated that the urine was intermittent, sometimes escaping and sometimes not. She told me that for the thirteen years since the last operation she had been absolutely comfortable, that she was only obliged to rise about twice in the night to evacuate the rectum and that neither the urine nor the menstrual flow while it had continued had irritated the rectum, nor had the feces annoyed her by gaining access to the vagina so far as her sensations went. By inserting a finger into the rectum, I found that the old fistula between the vagina and the rectum had so contracted that it would barely admit the point of my forefinger. This examination showed at once that there was a calculus formed in the vagina, which acted like a ball valve. I readily, of course, crushed it by means of a pair of curved forceps introduced through the rectum. The portion I secured uncrushed weighed seventy grains, and measured three-quarters by five-eighths of an inch. She made an entire recovery in three or four days.

A month ago, on May 7, 1896, she called again to say that while she had been perfectly comfortable for the seven years since the removal of the stone, three weeks ago a small abscess had formed at the former outlet of the vagina and that that morning the urine had commenced to dribble away. Examination showed the orifice of the vagina firmly closed excepting one small point just admitting a probe, through which some urine was escaping. Rectal touch showed that the recto-vaginal fistula was the same as before. I advised her to keep the parts clean and wear a napkin, and wait to see whether the small fistula would not close spontaneously. In two weeks this hoped-for result followed, and she is again entirely relieved of her distressing disability.

The case is particularly interesting, not only for its unusual character and its cause, but I believe it was possibly the earliest case in which the urethra itself was entirely removed and the vagina closed, the rectum thus being made to serve the triple purpose of a reservoir for the urine, the menstrual discharge and the feces. It is an encouraging fact that in any case requiring similar treatment, the later history shows that for over twenty years she has only twice had the least trouble, once from a small calculus forming in the vagina and once from a small abscess forming in the

cicatrix, which abscess has spontaneously closed. Instead of being a constant source of disgust to herself and every body about her, a hospital patient dependent upon charity, as she could not earn her daily bread, and a pariah cut off from all society, she has been enabled to become self-supporting as a nurse and to enter freely into her wonted social relations.

Gangrene extends to the perineum or arises primarily around the anus in a few cases. I have notes of eight men and six women, the sex not being given in two cases. Excepting three cases of eighteen, twenty-one and twenty-two years of age, they all occurred, when the age is stated, from thirty-nine to seventy-four years of age, later in life than most of the other sequels of typhoid. This is presumably due to the fact that in later life, the nutrition of the perineum is apt to be less vigorous than in early life. Excepting one in the second week, they all arose rather later than other cases of gangrene; namely, from the third to the seventh week—in other words, during distinct convalescence; and to this is probably due the fact that 10 recovered and five died. In a number of cases the bones of the pelvis were involved as well as the soft parts. This also probably partially accounts for the later occurrence of these cases.

Occasionally gangrene attacks very unusual regions or organs. Thus single cases are reported of gangrenous suppuration of the gland of Bartholin (Spillmann),<sup>55</sup> of the tongue (Gaston David),<sup>56</sup> of the uvula (Freudenberger),<sup>57</sup> of both ears (Sanda),<sup>58</sup> of the lips (Spillmann).<sup>59</sup> The cheeks are attacked more frequently and noma and cancrum oris are noted in my table as having been observed nine times, and as usual is very fatal, five of the nine having succumbed, the result in one being unrecorded. The lungs also suffered from gangrene in five cases, of which three died. As to all of these, there is nothing peculiar calling for more than their mention as indicating the protean manifestations of typhoid gangrene.

### III. TREATMENT.

To the treatment which I advocated twenty years ago little can be added. The preventive treatment is the most important, such as good food, fresh air, the best hygienic surroundings. Should the heart flag, the stimulation must be maintained at all hazards, alcohol in liberal doses is perhaps the best remedy. Digitalis, strychnine, spartein, strophanthus and other cardiac tonics of the later pharmacopeia may be added. The body should be carefully examined, especially those parts of it which experience has shown are most likely to be attacked, pre-eminently the lower extremities and the genitals. The arms, neck and head being exposed are much more likely to attract attention should they be attacked by gangrene than those which are covered by the bed-clothes. If baths are used, care should be taken that no mechanical injuries are inflicted, especially on the legs. Chapman's ice and hot-water bags, alternate heat and cold, with very moderate friction and stimulating liniments should be advised and the use of the constant current as a means of stimulating the collateral circulation, both in the deep as well as the superficial parts,

<sup>55</sup> Arch. Gén., 1881.

<sup>56</sup> Quelques consid. sur la gangrène typhoïde, Thèse de Paris, 1883.

<sup>57</sup> Aertlich. Intelligenzbl., 1879, xxvi, 542.

<sup>58</sup> Rev. Gén. de Clin. et de Thérap., 1892, vi, 401.

<sup>59</sup> Merc. Méd., 1896, No. 131, 146.

will be of service. If gangrene is not only threatened, but actually sets in, the gangrenous parts should be kept as aseptic as possible by the free use of antiseptic dressings.

The question of amputation naturally is one of the most important that is raised. In gangrene of the genitals, head, neck and trunk, operation of course, is limited to the removal of the dead and sloughing tissues and especially in the promotion of the utmost cleanliness, particularly in parts of the body soiled by urine, feces or the menstrual discharge. Detergent washes and stimulating douches, the keeping of the rectum free from accumulated feces and thorough and free incision in abscesses in the vicinity of the anus are to be especially commended.

In the extremities if amputation is necessary, the time when it shall be done depends largely upon whether the gangrene arises from distinct obstruction by a palpable thrombus or embolus, or whether it arises in the peripheral vessels without such an appreciable mechanical obstruction of the main vessels. In the latter case, the line of demarcation is usually established pretty early and the disease is generally unlikely to advance beyond this line. Amputation, therefore, should be done as soon as the line of demarcation is well pronounced, and it may be done but little above this line, since there is no obstruction in the vessels higher up which would threaten the integrity of the flaps.

In the cases where a distinct thrombus or an embolus has formed, however, the obstruction is very apt to extend farther and farther as time goes on by secondary thrombosis. At what level, therefore, the limit between the tissues which must necessarily die and those in which nature can still keep up a healthy life will occur, cannot be stated definitely until the line of demarcation is well established. But the facts obtained by a study of my two series of cases aid us very distinctly in this matter. When the clot extends only up to the popliteal, the leg may escape gangrene altogether, and should it follow, I have found it limited in 21 cases to the foot six times, to the lower half of the leg once and to the upper calf in 14 cases. When the clot extended into the femoral, the gangrene extended to the upper calf in 11 and to the thigh in eight cases. When the clot extended above Poupart's ligament, the gangrene was limited in 15 cases, to the foot in one, the calf in eight and extended above the knee in six. Amputation in these cases, therefore, should not be done, as a rule, until a well-defined and probably final line of demarcation has been formed. When operating, the leg should be made bloodless by elevation and kept so by very careful digital compression. The Esmarch bandage, as pointed out by Quervain, should not be used, partly because it may injure the vessels of the stump and so favor a new arterial or venous thrombus, partly because it may break up an existing venous thrombus and give rise to a dangerous embolus. To this I would add another evident objection, that the septic fluids in the tissues should not be forced into the general circulation. The hemorrhage will be slight, since certainly the artery and often both artery and vein will be obstructed, so that the "muscles will look like meat soaked in salt and water and there will be no oozing from the marrow of the bone." <sup>as</sup> Quervain's method of operating was both ingenious and useful. After forming an anterior flap and before

making the posterior flap containing the vessels of the lower thigh, he disarticulated only the bones at the knee-joint, dissected the femur loose for twelve centimetres above the joint, and divided the bone, then exposed the vessels and ligated them and last of all formed his posterior flap. The wisdom of ligating the artery before dividing it was shown by the fact that in the amputated part, it was found to be filled with a loose clot, which would almost certainly have been dislodged by the manipulation if the flap had been made prior to ligation and so have caused considerable hemorrhage. Such patients have not a drop of blood to spare.

As a general rule, therefore, we should wait for the line of demarcation, but the operation should not be deferred long after its appearance. If danger of septic infection or speedy exhaustion should appear, immediate amputation at or above the probable limitation of the disease should be done. The extension of the disease, if the femoral be free, will not be, in the majority of cases, above the tubercle of the tibia. If the femoral be involved, necessitating an amputation of the thigh, the resources and the safety of modern antiseptic surgery would lead us in general to amputate, but in some cases it may be a serious question whether expectant treatment and a relatively long-subsequent amputation might not be less dangerous than an earlier operation.

### Original Articles.

#### REMARKS UPON INTESTINAL OBSTRUCTION FROM KINKS AND FLEXURES AS THE RESULT OF PELVIC OPERATIONS AND INFLAMMATION, WITH ESPECIAL REFERENCE TO HYSTERECTOMIES.<sup>1</sup>

BY MAURICE H. RICHARDSON, M.D.

INTESTINAL obstruction, both acute and chronic, sometimes occurs as the result of sharp bends or kinks in the bowel. The faulty position of the intestinal coil, is generally due to adhesions formed deep in the pelvis. The direct causes of such adhesions are inflammations of the pelvic or of the contiguous viscera, and operative procedures by which a considerable portion of the pelvic floor is stripped of peritoneum. The small intestine is usually affected, though the sigmoid flexure with an unusually long mesentery, in rare instances, may be involved. Considering the great frequency of pelvic inflammations and of pelvic operations, it seems extraordinary that acute obstructions should so rarely proceed from this source.

The remote cause is probably anatomical. A coil of intestine, with a mesentery long enough to permit its descent deep into the pelvis, becomes adherent and fixed there. No subsequent change in the position of the coil is possible. Any variation which may take place in the size, shape, or posture of the pelvic viscera to which the coil has become attached, may, by stretching or by twisting the coil, so change its position as to impede the fecal stream. A considerable diminution in the size of the uterus, as in subinvolution, for example, may put upon the stretch even to an excessive degree, a coil adherent to the fundus. A change in the position of the uterus, for example, a gradual retroflexion, may put an adherent coil upon the stretch. A

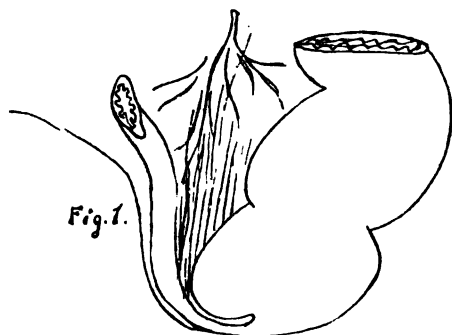
<sup>as</sup> Drewitt; *Lancet*, 1890, II, 1023.

<sup>1</sup> Read before the Obstetrical Society of Boston, March 17, 1896.



coil adherent to the denuded surfaces of the broad ligament after a vaginal hysterectomy may, as the vaginal wound contracts, be dragged upon until a sharp bend is produced. In the natural processes of cicatrization and contraction, moreover, the coil may be partially twisted upon itself, until a kink is produced. Two or more coils caught together in a general adhesive peritonitis may be so distorted by cicatricial contractions and by uterine involutions as to produce kinks and flexures, one or both. Furthermore, a coil may become prolapsed into the raw wound remaining after vaginal hysterectomy, and be directly constricted there by the process of cicatrization. In rare instances extensive denudations incident to the ablation of large pelvic tumors may leave depressions into which a coil may make its way, and become adherent at an unfavorable angle.

The production of obstruction in cases of adhesions thus produced is purely mechanical. Fortunately, it is only under the rarest conditions that adhesions, faulty even to a marked degree, result in serious obstructions. A kink or a flexure, even if extensive, does not necessarily cause obstruction. It is only



when the adhesion is so placed that proximal distention results in a kind of valve formation that any impediment to the fecal stream can arise. In sharp bends the mesentery of the affected coil will be found tense. If the distal portion of the coil rests upon an unyielding surface, proximal distention will increase the sharpness of the angle (Fig. 1).

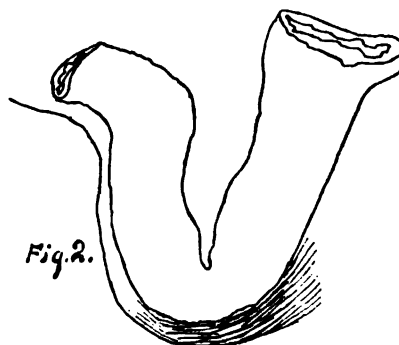
The greater the distention, the sharper the angle and the tighter the valve. If the distention can be overcome, the opening will become patulous, as in Fig. 2.

Under such conditions we shall find the portion of the intestine above the kink greatly distended; the portion below it, completely collapsed. That the obstruction is not due to an organic diminution in the lumen of the intestine, is shown by the fact that the bowel regains its normal calibre as soon as the adhesions have been completely freed (Fig. 2).

Though many of the obstructions under consideration come on gradually, and give full warning of their existence, others show no sign of their presence until the formidable symptoms of acute obstruction suddenly appear. In the former, attention is called to the abdomen by the intermittent peristaltic spasms which are necessary to force along the intestinal stream. At times it is possible to see distinctly the peristaltic movements, especially if the abdominal wall is thin. Moreover, the coil next the seat of obstruction is often so excessively distended that it can be seen and felt as a tympanitic tumor in the lower part of the abdomen.

In those acute cases which come on without premonitory symptoms, it is hard to see how a flexure which for a long time has done no harm, can suddenly close completely the intestinal lumen. The mechanism is probably similar to that in acute obstruction suddenly appearing in the progress of unsuspected chronic strictures. I have seen several cases of acute obstruction, for example, in which the most formidable symptoms have appeared without any premonition whatever; yet at operation I have found a stricture so small that an apple-seed or an orange-seed was sufficient to close it entirely. It seems probable, therefore, that the intestinal stream succeeds without difficulty in passing the bend until, for some reason, the proximal end becomes unusually distended, presses upon the distal portion of the coil, and closes tightly the valve.

Obstruction from kinks and flexures I have observed as the result of salpingitis and of perimetritis; in the course of extra-uterine pregnancy; complicating certain forms of appendicitis in which the appendix was situated low down in the pelvis, between the bladder and the rectum; and as the indirect result of vaginal hysterectomies.



Peritoneal adhesions are, directly or indirectly, the cause of the faulty position of the intestines which results in obstruction. Though we always expect to find adhesions of some kind after pelvic inflammations, yet in many instances these adhesions are of no importance. For example, in removing a diseased appendix, nearly a year after the evacuation of an abscess which apparently filled the whole pelvis, I found no evidence of the previously existing inflammation beyond a few loose adhesions in which the appendix was buried. On the other hand, extensive adhesions occasionally result after operative procedures unattended by peritoneal denudations or by septic complications. Considering the great frequency of inflammations in the female pelvis, it seems extraordinary that intestinal obstruction from faulty adhesions is so uncommon.

Post-operative adhesions can hardly be avoided if the peritoneum is extensively injured or if broad surfaces are completely denuded. Broad pedicles, uncovered by peritoneum, are likely to become attached to those coils of intestine which touch them. After the separation of adherent pelvic tumors, the dependent intestinal coils can hardly fail to become themselves adherent.

Perhaps the most prolific source of post-operative intestinal flexures is the vaginal hysterectomy. After removal of the whole uterus by the abdominal route, a wide opening into the vagina results, into which the intestinal coils naturally gravitate. To prevent the

prolapse and adherence of the gravitating coils, we close the raw vaginal surfaces when possible by inverting and suturing the peritoneum. The danger arising from the formation of faulty adhesions is thus reduced to a minimum. In vaginal hysterectomies, on the other hand, we are unable thus to cover in the broad denuded surfaces. They are, to be sure, approximated in some way by the ligatures or by the clamps which are applied to the broad ligaments before the uterus is freed; yet a very considerable surface remains uncovered by peritoneum. Moreover, unless we close the vagina—a procedure of doubtful utility—there is nothing to prevent the prolapse of certain intestinal coils, especially if their mesentery is long. In fact, at the completion of the operation, coils often will be seen presenting in the depths of the vaginal incision. In some instances excessive prolapse of the intestinal coils can be prevented only by packing the wound with gauze. As the vaginal orifice contracts, however, the intestines are doubtless drawn down into the scar tissue, and there, in certain instances, become adherent and sharply bent.

Bearing in mind the etiology of the condition under consideration, is it possible to prevent this unfortunate complication of pelvic operations? It is obvious that in some cases prevention is impossible; for instance, in abdominal operations upon the pelvic viscera when there are of necessity large denuded surfaces, which it is impossible to cover by means of peritoneum. The prevention of adhesions is also impossible in cases of sepsis, and whenever drainage is necessary. It is chiefly, perhaps, in hysterectomies that we can modify our technique. By the vaginal route, it is practically impossible to prevent the occasional occurrence of an obstructive flexure. By the abdominal route, the pelvic floor can be restored by inverting and suturing the peritoneum. Whether the rare occurrence of intestinal obstruction after vaginal hysterectomy is sufficient reason for abandoning that most satisfactory operation is a question which admits of considerable discussion.

In inflammations of the vermiform appendix, as well as in general and local peritonitis, the possibility of preventing faulty adhesions should be borne in mind; yet little can be done beyond placing the bowels in as natural a position as possible after removal of the appendix.

My attention was first called to acute intestinal obstruction from faulty adhesions by a case that I operated upon at the Waltham Hospital several years ago. In this case ovariectomy had been performed some years previously. Without warning, symptoms of acute intestinal obstruction suddenly appeared, which rapidly brought the patient to a condition of extreme gravity. Interference, practised as a forlorn hope, was unsuccessful. A coil of small intestine adherent to the right horn of the uterus was separated with great difficulty, and only at the expense of a tear in the bowel at the point of contact with the uterus. The intestinal wound was closed satisfactorily, but the patient did not survive.

A year or two ago I operated upon a young woman who presented the usual symptoms of acute obstruction. She was profoundly collapsed, and the operation was undertaken only as a last resort. A kink of small intestine in this case was found adherent to the right horn of the uterus and to the right Fallopian tube. Separation was accomplished only with difficulty and with laceration of the intestinal wall. The proximal portion of the intestine was enormously distended, the

distal collapsed. A sharp bend was found at the point of contact with the uterus, against which the distal-collapsed portion of the coil was firmly pressed by the distended proximal end. It was impossible for the intestinal stream to pass this sharp bend, accentuated as it was by the excessive proximal distention. There was great general distention, which not only interfered with the manipulations of this operation, but resulted in extensive extravasations of the liquid fecal matter through lacerations unavoidably made into the intestine at the point of adhesion. These were closed in the usual manner by interrupted Lambert stitches. The patient lived only a few hours.

The third case was that of a young man who had suffered for a week or more with the usual symptoms of appendicitis. He presented, in addition to the symptoms of the original lesion, those of mechanical intestinal obstruction. There was paroxysmal and painful peristalsis with gurgling. Through the abdominal walls intestinal coils could be seen to contract violently. No peritonitis was found. A kink of the small intestine was discovered low down in the right side of the pelvis. The adhesion was separated without difficulty. The fecal stream immediately passed on. The lumen of the intestine after separation of the adhesions became in this, and in previous cases, perfectly restored at the point of obstruction. This patient, too, succumbed in the course of a few hours.

A fourth case of obstruction, already published in some detail, was that of a young man upon whom I had operated during an attack of acute appendicitis. A gangrenous and perforated appendix was removed. A week or two later symptoms of acute intestinal obstruction appeared. The obstruction was not complete. Peristalsis could be seen through the abdominal wall, and a diagnosis of a faulty adhesion low down in the pelvis was made. On opening the wound the distended proximal coils were found ending in a sharp bend, beyond which the gut was completely collapsed. The coils were separated in all directions, washed with normal salt solution, and returned. This young man made a perfect recovery, and is now entirely well.

The fifth case was a vaginal hysterectomy in a woman of middle age. There was a well-marked cancer of the cervix, for which I removed the uterus by the vaginal route. The broad ligaments were carefully tied off on both sides, and the uterus delivered in the usual manner. I packed the vaginal wound with gauze. The patient made an uneventful recovery. Some months later she was suddenly seized with symptoms of acute obstruction, and died. At the autopsy a kink was found in the small intestine.

The sixth case was that of a young woman with an excoriated and suspicious cervix, who submitted to a vaginal extirpation of the uterus. The disease as in the preceding case was found to be malignant. The vaginal wound was packed with gauze. This woman made an early recovery. Some months later she was attacked with paroxysms of general abdominal pain. Dr. Brewster, who had charge of her during this attack, made a diagnosis of intermittent intestinal obstruction. The attacks of pain gradually subsided, and the bowel became patulous.

Some weeks later a similar, much less severe attack occurred, which I had the opportunity of seeing. It was evident that there was some form of obstruction. The intestinal coils could be seen through the thin



abdominal wall, the pain came on in paroxysms, and the intestinal stream could be felt with the finger in the vagina, passing with a gurgle through a coil adherent to the vaginal cicatrix. The second attack was transitory, lasting but a few days. This case, still under observation, is undoubtedly one of faulty adhesion with slight and transitory obstruction. Should the symptoms increase in severity, exploration will be indicated.

A seventh case came under my observation a year ago. A woman of thirty-five presented the symptoms of an intestinal obstruction of moderate severity. Paroxysmal pain located in the region of the gall-bladder suggested gall-stones; moderate distention with increased peristalsis, a slight intestinal obstruction. Exploration showed abdominal hemorrhage from a ruptured hemato-salpinx. A coil of small intestine, adherent to a tumor of the right tube, was drawn into a sharp bend above which there was distention, below collapse. Removal of the tumor, after separation of the adhesion, was followed by recovery. The tumor was a hemato-salpinx without evidence of pregnancy.

A diagnosis of obstruction dependent upon a flexure or a kink in the intestinal wall, can be made only provisionally. In the absence of any exciting cause of peritoneal adhesions in the pelvis, it is impossible to differentiate this form of obstruction from others. In all cases it is difficult, perhaps impossible, to make an exact diagnosis, even if the usual cause of flexures is present. The symptoms are those of acute or of chronic intestinal obstruction. When the valve action manifests itself suddenly, the symptoms will be those of acute obstruction; when gradually, those of chronic. If an acute obstruction comes on suddenly after a pelvic operation, after an acute inflammation of the tubes, the ovaries, the uterus, or any of the pelvic viscera, the diagnosis of a faulty adhesion is probable, especially if no tumor is found in the pelvis of sufficient size to compress the intestine. In no cases do the fulminating symptoms — gangrene of the bowel — occur. The symptoms are those of obstruction, pure and simple, and, as a rule, obstruction somewhere in the small intestine. I have never seen the large intestine in any way involved in this way by adhesions.

The only treatment for acute flexures is immediate exploration, with separation of adhesions. The etiology of the disease demands that every precaution should be taken at the time of the original operation to prevent the formation of adhesions. Unfortunately, this is a problem which as yet has not been successfully solved. Many methods of procedure have been recommended. All of them, however, are faulty and ineffectual. The fact probably is that those operations accompanied by extensive loss of the serous epithelium, in spite of every known preventive resource, result almost always in the gluing together of the contiguous peritoneal surfaces. As I have before remarked, however, inflammations even of the most extensive character are not invariably accompanied by adhesion formation. On the other hand, cases of comparatively slight injury may be followed by the firmest of adhesions. I operated recently upon a patient for ventral hernia — a patient from whom the tubes and ovaries had been removed some years previously. Though the recovery was uncomplicated after the first operation, I found that the intestines in all directions were firmly adherent to each other. To remove the

appendix in the interval of health I frequently have opened the abdomen a second time, after recovery from simple drainage of an appendicular abscess. In most of these cases adhesions have been absent, and yet at the time of the original operation they were presumably very extensive. In one case, in which a simple exploration of the uterus and ovaries was made, and in which suppuration followed, few if any adhesions were found. The sigmoid flexure had a small, loose adhesion to the right ovary. On the other hand, some of the simplest of abdominal operations are followed by extensive gluing of intestinal coils. It would seem, therefore, that we do not as yet understand the reasons why peritoneal surfaces adhere to each other. In plastic surgery of the peritoneum, it is well known that we aid the formation of adhesions by scratching the peritoneal surfaces which are to be sewed together. But if septic material gets between the opposed surfaces, close union is interfered with, or prevented altogether. This statement is exemplified by the giving way of sutures and the resulting extravasations seen in end-to-end sutures of the intestine. Contamination of the peritoneum in most cases, doubtless, results in an immediate exudation by which the opposing surfaces are kept apart. With the absorption of the fluid adhesions are formed.

It is clear, therefore, that sepsis is a by no means insignificant element in the solution of the question. Peritoneal irritation without sepsis doubtless promotes to a considerable degree adhesion formations. The irritation may be mechanical or chemical. Raw surfaces also act as irritants. Could we find some safe method of preventing the formation of adhesions, we should not only avoid the formation of kinks or flexures, with the deplorable symptoms of acute obstruction, but we should doubtless do away with many of those obscure abdominal pains which are so frequent after abdominal operations and diseases.

In abdominal operations the general technique should be so shaped as to avoid as far as possible the known causes of adhesion formation. Manipulations must be as gentle as compatible with the necessities of the case. If extensive regions are denuded they should be covered in, if it is possible to do so, by inverting the edges of the peritoneum and making a smooth surface. The extensive denudations in abdominal hysterectomy can be most satisfactorily covered by uniting transversely the folds of the broad ligament, and the anterior and posterior uterine flaps taken from the cervix. The projecting stumps of the ovaries may be buried in the folds of the broad ligament. Many cases arise, nevertheless, in which it is impossible thus to cover the surface which is likely to become adherent.

It is always important in abdominal operations to disturb the intestines as little as possible. If it is impossible to prevent the escape of numerous coils through the wound during the operation, they should be protected as well as possible by covering them with warm, moist gauze. Moist gauze seems less irritating than dry when used for this purpose, because the dry fibre sticking to the peritoneum tears it off when finally removed. Exposure and manipulations show their effect upon normal intestines long before the operation is finished. The coils become congested and swollen, the peritoneum rough and sticky. I have seen adhesions of considerable strength form during the brief manipulations of an end-to-end suture,

as illustrated in the following case of intestinal resection. To control the feces, I had placed in the proximal portion of the intestines a wad of gauze, which I forgot to remove until the suture was completed. It became necessary to remove a number of the sutures. After their removal the joint was so firm and tight that some force was necessary to separate the freshly agglutinated surfaces.

The replacing of coils which have escaped during the operation, or which have been delivered for purposes of inspection can be accomplished best by lifting up as high as possible the edges of the abdominal incision, and allowing the intestines to return in their own fashion. Beyond this, it seems to me, little can be done.

With reference to prophylaxis, it is a question whether gauze does not act as an irritant, and cause extensive adhesion. If the fibres of the gauze have been left any length of time in contact with the normal peritoneum, they leave their imprint upon it. The effect is precisely that of artificial irritation for the purpose of making two surfaces adhere more readily. It has occurred to me many times that gauze used in this manner may excite peritoneal adhesions. To dispense with gauze, however, is not practicable, for in many abdominal operations the peritoneal cavity must be walled off from a septic field. Moreover, in practically all pelvic operation, large gauze wads are essential to hold the intestines up and out of the way. The peritoneal irritation from this cause can be reduced to a minimum by keeping the original pieces in position without change.

The use of chemical solutions in the abdominal cavity to prevent the formation of adhesions, seems to me of doubtful utility. The least trouble from the gluing together of the peritoneal surfaces will follow those operations in which the asepsis is absolute, and in which the manipulations are as gentle and brief as the exigencies of the case permit.

Whatever the cause of acute intestinal obstruction, the treatment is obvious. Unless the symptoms are mild and transitory, an exploratory laparotomy should be performed as soon as the diagnosis is made. Bad results, almost without exception, are due to delay. In those cases of acute obstruction in which the lesion must cause necrosis of the bowel wall, the prognosis is practically hopeless. This list includes volvulus, intussusception, mesenteric thrombosis, internal strangulation, and, in fact, all conditions in which the circulation of the intestine is cut off. Fortunately in the disease under consideration, the circulation is unaffected, and the prognosis ought therefore to be good. The trouble in this, as in many other acute abdominal conditions, is that the patient is watched so long in the hope either of a favorable turn, or of a clear diagnosis, that the propitious moment for operation is lost. This error is conspicuous in perforation of the vermiform appendix, in the perforation of gastric and of typhoid ulcers, and in various other lesions in which an early operation means recovery — a late operation, death. As soon as the exploration is made, the diagnosis will be confirmed by the presence of distended coils in one part of the abdomen, and of collapsed ones in another part. To find the obstruction, it is best generally either to seek directly the seat of the original lesion, or to follow down the collapsed coil. As soon as the flexure is discovered, the greatest care must be taken not to tear the distended coil.

From my experience, which as I have shown above is a limited one, it is extremely difficult to separate a sharp bend without opening the lumen of the intestine. If two intestinal coils are thus glued together it is especially difficult, if not impossible, to separate them without opening either one coil or the other. In case, however, the adhesion is to the horn of the uterus, or to the side of the pelvis, or to the abdominal wall, by making the separation at the expense of the viscus to which the intestine is attached, we can be sure of not opening the lumen of the intestines. To open accidentally, or in spite of every precaution, the intestine, is a very serious complication, for the proximal coils excessively distended with liquid feces, empty themselves over the field of operation the moment the tear is made. Not that the escape of fecal contents is invariably fatal, for I have known of many cases in which such contamination has not been followed by serious results. Yet this complication must by every means possible be avoided. As soon as the adhesion is separated, the operation is finished. If, by any chance, a tear has been made in the intestine, it must be closed, preferably with the Lembert interrupted suture, either in one or in two layers. As already remarked, the lumen of the intestine at the point of constriction, as a rule, will be found unimpaired. The prognosis in these cases is of necessity grave, from the fact that in most cases the operation is performed too late.

As a post-operative complication, acute obstruction seems to result most frequently from flexures or kinks after vaginal hysterectomies. By the vaginal route it seems impossible to prevent the prolapse of intestinal coils into the funnel-shaped raw surface left by the removal of the uterus from below. Even if the vagina is closed, the denuded surfaces remain.

The question of route in hysterectomies seems therefore to be influenced somewhat by the possibilities of post-operative obstructions. In many cases of uterine disease the abdominal route is the only practicable one. These are tumors too large to be removed by the vagina, or cases in which the uterus is so fixed that the vaginal route is more dangerous than the abdominal. Were it not for certain disadvantages connected with the abdominal route, I should perform hysterectomy always in that method; if for no other reason than the conspicuous one that everything by that means can be seen. Hemorrhages can be controlled, — the ureter can be seen and avoided — there is no blind groping about among anatomical regions filled with structures of the greatest importance. But, on the other hand, there are many cases of uterine disease which can be treated most successfully by the vaginal route, — cases in which the body of the uterus is affected, perhaps, by malignant adenoma, or cases in which the cervix is but slightly involved; cases in which the uterus can be easily brought down and the broad ligament tied. In such cases, the vaginal route, it seems to me, is preferable as far as the technique is concerned, for we can hug closely the uterine body, and avoid the ureters; we can tie the broad ligament. The only disadvantage is that of the possible formation of kinks and flexures, with subsequent intestinal obstruction.

It seems, therefore, a fair question for discussion whether, in those cases which are particularly suitable for vaginal hysterectomy, it is worth while to do the operation by the abdominal route for the sake of avoid-

ing the possibilities of an acute obstruction from a kink. My method of finishing a vaginal hysterectomy is as follows: As soon as the uterus has been separated, and careful examination shows that there is no hemorrhage, I pack the wound in the depths of the vagina by means of sterile gauze, or in some cases by means of iodoform gauze. This fills in the funnel-shaped opening left by the removal of the uterine body. As soon as the uterus is removed, coils of small intestine are usually seen in the depths of the vaginal wound. These are pushed up out of place by the gauze. The two cases which have occurred in my practice, one an undoubted case of obstruction, as shown by the autopsy, and the other a probable case, have followed hysterectomy by this method. The only modification that could possibly be made to prevent this accident would be the closure of the vagina. I have never resorted to this because it seems to me that the good results following vaginal hysterectomy have been due partly to the constant drainage of the gauze. It does not follow that the closure of the vaginal outlet will prevent the formation of the kink, for this would be merely closing the lower end of the ragged wound, not the upper. If additional experience should show that vaginal hysterectomy is likely, in a considerable number of cases, to be followed by intestinal obstruction, it seems to me that this route will have to be abandoned.

#### THE INFLUENCE OF OVERWORK IN SCHOOL IN THE PRODUCTION OF NERVOUS DISEASES IN CHILDHOOD.<sup>1</sup>

BY PHILIP COOMBS KNAPP, A.M., M.D.

"MUCH of our school system," said Dr. Edes, in the third volume of these reports, "seems almost expressly designed for the manufacture of nervous invalids from material only too easily worked, and too abundant, in the form both of scholars and teachers." True as this criticism was, and still is, in many cases, it seems somewhat too sweeping. I have therefore studied a number of cases of nervous disease in school-children, in order to determine, if possible, how far the school system, or, rather, overwork due to that system, was responsible for the trouble.

The number of my own cases available for such study is, unfortunately, rather limited. In the first place, cases which were not suffering from distinctly nervous affections were excluded, and only those cases were considered which were still enrolled in school. Excluding such cases, I have examined 150 consecutive cases of nervous disease in children between the ages of five and fifteen who have been under my own observation in the out-patient department at the City Hospital. As the severer structural diseases of the nervous system are likely to incapacitate a child from attendance at school, only a comparatively small number of such cases are included. The first of the following tables will show the various affections from which the patients suffered.

The second table shows the distribution of the cases according to age.

Above the age of fifteen so few children of the out-patient class attend school that they need not be considered.

<sup>1</sup> This paper will appear in the Medical and Surgical Reports of the Boston City Hospital, Seventh Series.

With patients of this class, too, certain factors which tend to produce disease are more potent than with children of the better class who are seen in private practice. To the unsanitary conditions which are only too apt to obtain in our school-houses are often added the unsanitary conditions of their homes. The evils of improper feeding and of bad cooking are also more pronounced.

TABLE I.

	Boys.	Girls.	Total.
<b>Diseases of the Nerves and Cord.</b>			
Peripheral paralysis . . . . .	3	3	6
Diphtheritic paralysis . . . . .	2	2	4
Anterior poliomyelitis . . . . .	2	..	2
<b>Diseases of the Brain.</b>			
Hemiplegia . . . . .	5	4	9
Tumor of brain . . . . .	1	..	1
Concussion of brain . . . . .	2	..	2
Feeble-minded . . . . .	4	..	4
<b>Functional (?) Affections.</b>			
Chorea . . . . .	45	50	95
Epilepsy . . . . .	6	5	11
Hysteria . . . . .	4	2	6
Cephalalgia . . . . .	2	3	5
Insanity . . . . .	2	..	2
Torticollis . . . . .	2	1	3
<b>Total . . . . .</b>	<b>80</b>	<b>70</b>	<b>150</b>

It is perfectly plain that the question of the causation of nervous affections in school-children is far from simple. The school system may have a direct influence by compelling the child to do too much mental work, and it may and does have an indirect influence by exposing the child to bad air and unsanitary surroundings, by compelling him to remain in cramped positions on unsuitable seats and at unsuitable desks, by straining the eyes by imperfect light, by limiting the opportunities for proper exercise, by increasing the chances of exposure to infectious disease, and by many other conditions. These indirect influences, however, although important, are due to removable causes which obtain only in certain schools, and are not due to any inherent defects in the school system itself.

TABLE II.

Age.	Boys.	Girls.	Total.
Five . . . . .	1	1	2
Six . . . . .	3	9	12
Seven . . . . .	4	7	11
Eight . . . . .	9	8	17
Nine . . . . .	9	5	14
Ten . . . . .	13	13	26
Eleven . . . . .	15	2	17
Twelve . . . . .	9	5	14
Thirteen . . . . .	8	10	18
Fourteen . . . . .	5	6	11
Fifteen . . . . .	4	4	8
	<b>80</b>	<b>70</b>	<b>150</b>

In addition to the injurious factors due directly or indirectly to the school system, other factors wholly independent come into play. Heredity, injury, infectious disease and bad food are all of great importance. Only too often, however, we see such factors ignored, and undue stress laid upon some comparatively insignificant, or at any rate subordinate, factor. We all know how the laity prefer to attribute any nervous trouble in children or in adults to a fall or to overwork, rather than to admit a bad heredity, evil habits or an invalid brain. In children between five and fif-

teen two other factors have some influence. In a few instances, especially in weak, ill-nourished, or neuro-pathic children, the second dentition has a disturbing influence, although, with the advance in our knowledge of proper feeding and the causation of various diseases, we shall probably find that the influence of both the second and first dentition has been much overrated.

The influence of puberty is much greater. A glance at Table II will show, however, that this is applicable in less than one-third of the cases, for in children below the age of twelve it can hardly have an influence. The influence of puberty is also overrated, for the influence of the period of most rapid growth is associated with it, and the latter must be very great. In both sexes, but especially in boys, the psychical effect of puberty often outweighs the physical. As a matter of fact, in these cases, out of twenty-five girls twelve years of age and over, only ten had menstruated, and in six the function had been established without difficulty, and had proceeded regularly and normally.

As a matter of fact, in any given case of nervous disease it is practically impossible to apportion out to each individual cause its share of the responsibility. Several causes usually work together to bring about the result, and overwork in school is often merely the last straw. If under any given school régime only a part of the scholars break down, there must be some reason other than the school work why they succumb while their comrades are unaffected. In most cases a bad heredity, poor food, bad hygienic conditions at home, or previous disease will be found to have prepared the way for the nervous trouble.

It is impossible, furthermore, to lay down any fixed rule as to the amount of school work which is injurious. One child can do without effort what another child in the same class can do only by straining every nerve. Folsom<sup>2</sup> speaks with unqualified disapproval of double and treble promotions, but even a treble promotion may be obtained by a bright child without undue effort. Home study is also unwise, especially below the age of thirteen, but in a certain number of cases it does no harm.

In only 21 out of these 150 cases did the school work seem to have any influence. In one other case where there was rather too much school work, the trouble was so clearly of traumatic origin that the school work could be excluded. In four cases the influence of school work was also slight. In a case of cephalalgia with hypermetropic astigmatism, study, as might be expected, brought on the headache. A girl of twelve with a bad heredity had her fifth attack of chorea after worry over her school work. A boy of six developed chorea after he had been at school two weeks, and after he had received several blows on the head. A boy of thirteen had hysterical convulsions after a fright, and talked much of his school work, which had not been severe. Such cases show that school work may have an influence upon a disordered nervous system, but that the trouble is not caused primarily by the work.

In eight cases of chorea, six boys and two girls, there was more school work than was advisable, but there did not seem to be such an amount of work as very seriously to tax the children. In seven of these cases other factors were present: bad heredity, poor diet, rheumatism, or fright.

In nine other cases of chorea, four boys and five girls, there was a history of very considerable work, involving much home study, early rising and late hours. In six of these cases there was also poor diet, bad heredity, some previous infectious disease, or overwork at home.

The following table shows that in cases below the age of ten, which form over one-third of the whole, the question of overwork plays hardly any part:

TABLE III.

Age.	Moderate Study.			Hard Study.			Totals.
	Boys.	Girls.	Totals.	Boys.	Girls.	Totals.	
Nine years . . .	1	..	1	..	..	..	1
Ten years . . .	2	1	3	1	2	3	6
Eleven years . .	2	..	2	2	..	2	4
Twelve years . .	1	..	1	..	..	..	1
Thirteen years .	..	1	1	..	2	2	3
Fourteen years .	..	..	..	1	1	2	2
Totals . . .	6	2	8	4	5	9	17

These cases, although limited in number, are, perhaps, enough to warrant certain deductions. It is, of course, hardly to be expected that overwork in school would have any influence in producing structural changes in the nervous system, but it is of interest to note that it seems to have had as little influence in the production of epilepsy and hysteria. A second point worthy of note is that while the ordinary result of overwork in the adult is neurasthenia, we find no case of neurasthenia in these 150 children. Although neurasthenia is one of the commonest nervous affections, forming nearly 11 per cent. of over 2,000 consecutive hospital cases, it is rarely seen in children. On the other hand, in the present series of cases we find a history of possible overwork only in cases of chorea. Chorea forms over seven per cent. of these 2,000 cases referred to, but it is almost as rare in adults as neurasthenia is in children. This naturally leads us to ask whether chorea is the manifestation in the child of that condition of nervous break-down from over-strain, worry, etc., which in the adult we call neurasthenia.

I am disposed to doubt it. Among recent writers on chorea, Sachs, Gowers, Oppenheim, Blocq and Soltmann have little to say about overwork in school as a cause; Sinkler, Osler, Dana and Sturges, on the other hand, lay considerable stress upon it. As Sachs has stated, "the mental calibre of children who develop chorea is rather above than below par," so that we naturally see many choreic patients who are bright, precocious, ambitious, and with a natural tendency to excel in school, and to work beyond their strength. Chorea is most apt to begin in the spring, which has led many to associate it with school work, since then the child begins to show most markedly the effect of the winter's work and confinement, but Sturges admits that the bad air and unsanitary conditions of the school-room have an influence. In adults as well as in children, the effect of confinement to the house, and the impaired air of the house during the winter, are very apt to lead to a lowering of vitality

<sup>2</sup> Folsom, C. F. The Relation of our Public Schools to Disorders of the Nervous System. Boston, 1896.

in the spring. The weather, too, has some influence upon the development of the disease. In addition to this, the general trend of medical opinion is toward the belief in the infectious origin of chorea.

In the present series of cases, only nine, or less than ten per cent., of the cases of chorea gave a history of any very excessive school work, and in most of these cases other factors were also present. If, therefore, school overwork be a factor in the production of chorea, it must be of minor importance, and, as I have said, I am much more disposed to view chorea as an infectious disease than as an indication of nervous break-down from overwork, corresponding to neurasthenia.

Apart from these cases of chorea, overwork in school does not seem to have been a factor in causing nervous disease in this series of 150 cases. This corroborates, so far as a limited number of cases can, the opinion of Charcot\* that up to the age of fifteen, and in the primary and grammar courses, school overwork is rare. The child will work — will pay attention — up to a certain point; but up to that age he is not sufficiently self-conscious, and he has too little ambition to make him overdo. When he reaches the limit of his endurance he stops work and pays attention to something else; he does not spur himself on to work beyond his strength. "The child remains passive; when he does not wish to work he does not work, and overwork is produced only by an effort of the will."

This rule, which has also been confirmed by Mr. Galton, holds in the majority of cases. Now and then we see a precocious child, especially a girl, who is distinctly harmed by too much study; but those cases are rare, especially in children of the out-patient class. Above the age of fifteen, however, it is another story. In hospital cases the number of children who go to school beyond that age is very small. We see, however, in private practice, especially in girls and young women, cases enough to justify the quotation at the beginning of this paper. After the age of fifteen, and during the high-school course, the conditions are altered. The period of puberty has begun, with its physical strain and its physical changes. The pupil has become more self-conscious, his ambition is aroused, the importance of preparation for the work of life begins to be appreciated, and ambition for intellectual victory over his comrades is awakened. The curriculum becomes more crowded and more absurd, and the stress of examinations greater. The youth keeps at his work, and is less ready to drop it when he begins to grow tired. Overstrain results, and, if other factors unite, break-down may follow. From obvious reasons — a less hygienic life, limited exercise, and the development of the menstrual function — this break-down occurs most frequently in girls. Before the period which may be roughly marked by the fifteenth year, overwork in school is much less common, and rarely occasions nervous disease.

**A MIXED METAPHOR.** — A Vice-President of the English Pharmaceutical Society, eulogizing the retiring President, said that "the bread which that gentleman had cast upon the pharmaceutical waters would bring forth fruit to his own satisfaction."

\* *Leçons du Mardi*, I, 34; II, 29.

## THE JAVAL OPHTHALMOMETER AND THE METHODS OF TESTING ITS ACCURACY.

BY F. W. ELLIS, M.D., MONSON, MASS.

THE Javal ophthalmometer has been the subject of numerous discussions and a voluminous literature. Its votaries are many; and their praises are frequently loud, and sometimes extravagant. There is also a censorious contingent that sees no good in the instrument, and confesses itself unable to derive any advantage from its use. Although these contending factions make the most noise, the ultimate status of the clinical ophthalmometer will probably be settled by the large number of practitioners who are quietly using the instrument as an adjunct to their other diagnostic tools, with profit to their patients and pleasure to themselves.

If it be possible to "damn with faint praise," there is an equal liability of damaging with over-praise; and the ingenious invention of Javal and Schiötz is no doubt suffering from the excessive admiration of some of its friends. On the other hand, the strictures of those who consider it entirely superfluous are not likely to be a great detriment to it, as they are too often due to a lack of intimate acquaintance with the instrument, and deficient knowledge of the principles of its construction. It cannot greatly injure the reputation of the ophthalmometer among those who possess a knowledge of the elements of physiological optics to be informed that it does not measure the posterior curvature of the cornea, inasmuch as such a determination has never been exactly made by any method, and has no practical importance. The reviewer who recently urged this objection in the *JOURNAL* possibly forgot, for the moment, that the refractive index of the aqueous humor is so nearly identical with that of the substance of the cornea, that the curvature of the posterior surface of that membrane has almost no influence on the refraction of the eye. Nor is it a severe arraignment of the ophthalmometer to be told by the same reviewer that it does not give us any information regarding the posterior curvature of the bulb; as we, unfortunately, have no means of accurately determining this curvature. Retinoscopy certainly does not do this, as one might be led to suppose from the context of the critic of Dr. Roosa's book.

Retinoscopy is an exceedingly valuable objective method of determining the refraction of the eye. The writer has employed it for the past ten years with the greatest satisfaction. If it were to be a choice between retinoscopy and ophthalmometry, retinoscopy, in the writer's judgment, should have the preference. But we are not reduced to such an alternative. We can avail ourselves of the advantages of both; which supplement each other in the most helpful manner. All the methods of determining the refractive condition of the eye have their limitations and defects. Retinoscopy is not infallible, — the most ardent advocates of the method are obliged to admit this. Fick,<sup>1</sup> who has made a careful study of the method, and warmly endorses it, mentions in his excellent monograph a number of sources of possible error in employing it.

The distance of the fovea centralis from the posterior principal point is the all-important thing in

<sup>1</sup> *Die Bestimmung des Brechzustandes eines Auges durch Schattenprobe.*

determining the refraction of the eye. The distance of the remainder of the retina from the dioptric apparatus, and, consequently, the general curvature of the fundus, have an entirely subordinate influence upon the acuity of direct vision. The fovea, and even the macula, embrace but a comparatively small portion of the posterior part of the eye. It is quite conceivable that the sensitive elements of the fovea may, in some cases, occupy a position slightly anterior or posterior to that of the rods and cones in a neighboring part of the retina. A very minute difference in this respect would occasion an appreciable difference in the refraction of the eye for the two points. Theoretically the spot of light, the movements of which in the retinoscopic test reveals the refraction of the eye, should be a mere point; which it is not and cannot be. It must also be borne in mind that, in testing the visual acuity subjectively, we are ordinarily dealing with retinal images of extreme minuteness.

The retinal image of a test type that should be read by a normal eye at twenty feet would have a height of less than  $\frac{1}{1000}$  of an inch. Compared with this quantity, the dimensions of even the fovea are enormous; which, according to late researches, has a width nearly or quite equal to that of the papilla.<sup>2</sup> The point to remember is that in the ordinary test for the acuteness of vision, we are investigating the condition of a minute area of the retina. The visual acuity depends upon the position and integrity of this restricted area. The weak point in retinoscopy is that we do not ordinarily measure the refraction of the eye in this area. In order to do this the pupil and the accommodation must be paralyzed, and a very small luminous image employed. Without these precautions, the patient contracts his ciliary muscle in looking directly at the mirror; which is necessary in order to bring his macula into the line of vision of the observer; at the same time the pupil contracts to a very embarrassing extent. Both of these occurrences vitiate the test. In an ordinary retinoscopic examination without atropine, we measure the refraction of the eye for a point a little distant from the macula, which is alone concerned with direct vision. The findings of the retinoscope in expert hands are not always identical with those of the trial case, although they are generally a close approximation. Cases are frequently encountered in which the retinoscopic test is applied with difficulty on account of the smallness of the pupil. Retinoscopy is not infallible; but it must be admitted that its results are generally satisfactory, and frequently surprisingly accurate. Ophthalmometry and retinoscopy are not rival methods, but they serve as excellent checks to each other in doubtful cases.

The ophthalmometer is not indispensable in ordinary clinical work, but it is a great time-saver. It frequently puts the practitioner upon the right track at the very beginning of his examination. Its use conduces to accuracy and scientific precision, especially in complicated and doubtful cases.

The value of the Javal ophthalmometer should be estimated from a scientific as well as practical standpoint. It has served as an energetic stimulus to the study of astigmatism. There are many problems connected with astigmatism that can only be worked out

with its use. The bulky volume annotated by Javal<sup>3</sup> attests the ardor with which numerous observers in various countries have employed the ophthalmometer in physiological and clinical investigations. Although the work already accomplished is of great value and extent, many important problems capable of solution with the systematic and intelligent use of Javal's instrument, await the investigator. Every owner of an ophthalmometer who thoroughly understands his instrument, and possesses an adequate knowledge of physiological optics, can contribute to the advancement of ophthalmology by patient, honest work.

It is true that the ophthalmometer does not measure the total refraction of the eye, but only the curvature of the cornea. It is equally true, however, that the greater part of astigmatism is due to irregularities in this curvature. The ophthalmometer does not always give the total astigmatism; if it did its clinical value would be somewhat increased, but its scientific usefulness would be greatly lessened. By means of the ophthalmometer we can resolve astigmatism into its elements, and study the influence of various factors in its production. Every ophthalmologist, who is something better than a mere bread-and-butter practitioner, should be anxious for the advancement of his science, and ready to avail himself of all its practical resources. It is undoubtedly a mistake to prescribe glasses from the readings of the ophthalmometer alone; but it is a comparatively easy matter to control the results of the ophthalmometric examination with other methods, which should never be neglected.

In the many articles that have been written upon the Javal ophthalmometer very little has been said upon the desirability of testing its accuracy. It seems to be taken for granted that all instruments bearing the name are equally reliable. If all the Javal ophthalmometers emanated from the same maker this assumption would have a better warrant; but this is not the fact. A considerable number of opticians are engaged in the manufacture of the instrument with varying degrees of skill; and this circumstance should render us suspicious. Every one who purchases an ophthalmometer should satisfy himself with proper tests that his instrument is reliable.

The Javal ophthalmometer is designed to measure directly the radius of curvature of a limited area of the cornea. It is necessary, in order to effect this purpose, that it should be capable of measuring accurately very minute quantities. A variation of one-tenth of a millimetre in the radius of curvature of the cornea may affect the refraction of the eye to the extent of half a dioptre or more. The ophthalmometer should be an instrument of precision; and, like all instruments of precision, its accuracy should be controlled by tests. It is a comparatively easy matter to make these tests, and they should never be neglected.

In measuring the radius of the various meridians of the cornea, we are dealing with unknown quantities; consequently, so long as we confine our measurements to the eye, we have no proof of the accuracy of the instrument. But we can substitute an artificial cornea of glass or metal, the radius of which has been accurately determined by other methods. If the reading of the scale of radii on the arc of the ophthalmometer corresponds with the known radius, we know that the instrument is accurate for this radius, at least. By employing several artificial corneas with different

<sup>2</sup> Dimmer: Beiträge zur Anatomie und Physiologie der Macula Lutea des Menschen, 1894.

<sup>3</sup> Mémoires d'Ophthalmométrie.



radii, we can easily assure ourselves of the accuracy of the instrument within the limits necessary for its purpose. The all-important thing in the test is to know exactly the radius of the artificial cornea.

The ophthalmometer that I have used for nearly six years is of the model of 1889, and was made by Goubeaux, of Paris. Some time ago I determined to assure myself of its accuracy. I first constructed an artificial cornea of glass with a radius of exactly eight millimetres. The spherical surface was ground and polished by the methods employed in making microscopic objectives. I first constructed concave and convex gauges of sheet-steel, measuring the radius with a micrometer caliper reading to one one-hundredth of a millimetre. The grinding tools were made to fit these gauges perfectly and the finished lens exactly corresponded with the concave gauge. The lens was then covered on its edge and back with a dead-black cement, and mounted in a hard rubber cell. The cell was fitted to a thin board, which could easily be attached to the head-rest of the ophthalmometer.

The first measurement of this lens with the ophthalmometer showed that something was wrong with the instrument. Upon investigation I found that the stationary mire had become slightly displaced; I thus received my first lesson in regard to the desirability of occasionally testing my instrument. After replacing the mire, I found to my satisfaction, that the reading of the scale was exactly eight millimetres, as it should be. I then proceeded to test the ophthalmometers of two of my friends with the same artificial cornea. These instruments were of American manufacture, and my national pride was hurt by the discovery that one of them registered 8.6 millimetres and the other 9.25 millimetres. I thus received my second lesson as to the extreme importance of testing the ophthalmometer before pinning one's faith to the instrument.

In order to further test the accuracy of my own instrument, I adopted a mode of procedure the reverse of the first that I employed. I measured the curvature of an artificial cornea of unknown radius with the ophthalmometer, and found it to be 6.5 millimetres. I then constructed a concave gauge of the same radius, and found that it fitted the artificial cornea exactly.

It is not to be expected that many ophthalmologists will take the trouble to construct their own test-mirrors. It should be an easy matter to obtain them from practical opticians, preferably from those not interested in the manufacture of ophthalmometers. The essential thing is that they should be of guaranteed accuracy. Several of these mirrors with different radii, mounted side by side, form a most useful addition to the ophthalmometer; and an instrument that does not indicate accurately their radii, should be rejected.

Not only are test-mirrors useful in detecting original defects, but they immediately indicate any faults of adjustment. These latter probably occur much more frequently than is generally supposed by those who have not been in the habit of testing their instrument. A slight change in the position of the fixed mire, objective, or eye-piece produces a very considerable change in the reading of the scale. A momentary glance through the ophthalmometer at an artificial cornea will detect the existence of such faults.

Javal<sup>4</sup> employed polished steel balls for testing his instrument. I have used this method with success.

It is necessary that the balls should have a perfect polish, and that their radii should fall within the limits of the scale. Their radii are first measured by a delicate micrometer caliper, and then with the ophthalmometer. If the ophthalmometer is accurate the two readings should agree. If balls perfectly polished can be obtained, this is a most excellent method.

The artificial cornea is very useful in familiarizing the beginner with the adjustment and manipulation of the ophthalmometer. Some of the later French instruments have an artificial cornea of metal, curved differently in the two principal meridians (*miroir torique*) which is, no doubt, useful and convenient. A spherical mirror of glass, however, can be employed instead. Dr. Morgan, of Boston, devised an arrangement made by Meyrowitz of New York, which enables the student to simulate different degrees of astigmatism. A lens-holder, like that of a trial-frame, is fastened in front of a glass cornea attached to a metal plate, which can be hung upon the head-rest. By placing convex and concave cylinders from the test-case in the frame, astigmatism can be counterfeited. As the holder occupies an invariable position with respect to the cornea it is not possible to simulate every degree of astigmatism with this apparatus. In order to do this, I have mounted an artificial cornea coaxially upon the end of a screw. The axis of the screw is at right angles to the centre of the lens-holder. By turning the screw the glass mirror can be approximated to or withdrawn from the cylindrical lens. By varying the cylinder, and the distance between the cylinder and the mirror, astigmatism of any amount can be accurately simulated. By means of this simple apparatus many interesting experiments can be performed which enable the beginner to master the ophthalmometer, and the adept to assure himself of its good working condition.

## Clinical Department.

### CELIOTOMY FOR INTESINAL ADHESIONS.<sup>1</sup>

BY G. H. WASHBURN, M.D.

M. D., single, about forty-eight years old, was first seen by me in the spring of 1889. She was then complaining of pain in the lower part of her back, and across the lower part of the abdomen, with a feeling of throbbing and bearing down in the pelvis. She had commenced menstruating at sixteen, generally going some days over time; she flowed a week, and generally used about ten to fifteen napkins. During the two years previous to my first seeing her (namely, in 1889) she had menstruated only a couple of times; the last time in the winter of 1887, about November. She had considerable leucorrhœa, thick, viscid, whitish. Bowels regular. Micturition normal. Sleep poor; wakeful and restless. Very nervous; worries over little things. Tires easily.

I found a very small and dense hymen, not admitting even the little finger. Uterus was atrophied and retroverted; not sensitive; apparently causing no disturbance. I replaced the uterus; but though there was no pessary used, the organ stayed up very well.

At first she improved a little under tonic treatment. About July, 1889, she began to have considerable

<sup>4</sup> L'Ophthalmométrie clinique, Helmholtz's Festgruss, p. 41.

<sup>1</sup> Read before the Obstetrical Society of Boston, March 17, 1896.

mucus in the dejections. The pain was located more especially in the right groin and up towards the umbilicus. At times, on abdominal palpation, a mass could be felt down towards the right groin. A question as to floating kidney was raised, and she was given ether for a more thorough examination. Nothing was found of any account. She was put on careful but generous diet, given iron tonics, and the faradic current passed through the bowels for fifteen minutes every other day. There was decided improvement for awhile, so that she got to going about a good deal. Then the pain in right groin became worse and mucus increased in the dejections. There was continuous pain across the lower abdomen to the right of the median line, keeping her awake nights.

She was seen by Dr. Cutler; and at his suggestion several lines of treatment were carried out, but without relief to the pain or mucous discharges.

I taught her how to take high enemata, in the knee-chest position; she would take a couple of quarts of hot water this way. After a while it would come away with a large quantity of mucus, and there would be relief for a part of the day.

She kept on this way with varying comfort, but on the whole steadily losing ground until 1894, when I decided to open the abdomen and try to find out the cause of all the trouble.

Assisted by Dr. Kingman at St. Elizabeth's Hospital, I opened the abdomen. Found the pelvic organs all right—all atrophied. The appendix was free and perfectly normal in appearance. But the small intestines between the ileo-cecal valve and umbilicus were fastened together by thin, transparent adhesions for a short distance. As nothing else was found, I separated these adhesions. The abdomen was closed up. Patient made a very good, uneventful convalescence, entirely free from the pain that had been troubling her.

She continued well for about five months, then the pain began to return again. She had begun to work again, sewing furs. For a while the use of electricity (faradic current) gave relief; she would feel quite comfortable for a couple of days after.

Patient gradually became worse, however, complaining especially of pain about the umbilicus and down towards the right iliac region. Mucus again appeared profusely in the dejections. Finally she took to her bed.

No remedies seemed to have any effect. Even the electricity failed at last to give relief.

Last January she consented to another celiotomy. Assisted kindly by Dr. John Munro, the abdomen was opened at the site of the previous incision. The omentum was found adherent to the abdominal wall for some distance, but was peeled off without much trouble towards the right. Pelvic organs and appendix found normal as before, but about ten feet of small intestine was bound together by thin adhesions, in places forming kinks and pockets. An effort was made to tie off these adhesions as much as possible, to avoid leaving raw surfaces. This could not be done, however; and they were torn apart carefully. There was no cautery at hand to try burning the adhesions. A considerable portion of the omentum, especially on the left side, was so firmly adherent that it could not be torn off without violence.

The abdominal wound healed readily, but the pain was relieved for only a couple of days. Since then she has been in bed most of the time. She complains of

severe abdominal pain. Various remedies have failed to give relief; even a quarter of a grain of morphine every two hours seemed to give little alleviation. She is kept awake nights. Some mucus again in dejections.

This operation has certainly failed to give any relief. There does not seem to be much prospect of better results by repeating the operation even by using sterilized oil in the abdominal cavity after separating adhesions.

I have brought this case before the Society hoping for some suggestions as to any possibility of relief.

## NINE CASES OF INTUBATION TREATED BY ANTITOXIN.<sup>1</sup>

BY CHARLES B. STEVENS, M.D., WORCESTER, MASS.

THE attitude of many physicians in regard to antitoxin is excuse for still reporting cases of diphtheria treated by that remedy.

The following nine intubations were, with one exception, seen in consultation late in the disease, and were *in extremis* from laryngeal obstruction. Nearly all had membrane on tonsils or pharynx. Klebs-Löffler bacilli were present in eight cases, absent in one. Four cases were fatal, two of which were profoundly septic when first seen, another being complicated with broncho-pneumonia at the beginning, and the fourth, which was favorable at first, dying of blocking of the tube.

The recoveries were due apparently largely to the antitoxin. The best results naturally occurred in those children who had not become septic from mixed infection.

Feeding the intubated cases by the soft-rubber tube passed through the nose also contributes largely to favorable results. The advantages of nasal feeding are that nothing gets into the trachea, that the nasopharynx does not get irritated by food and drugs (as happens in Casselberry's method), and that sufficient and known quantities of food and drugs can be given by the physician or nurse at regular intervals, and not at the pleasure of the patient. My routine treatment is to feed the intubated child four times a day by the nasal tube, giving at each feeding:

Milk . . . . .	3 ill to vi
Whiskey . . . . .	3 ill to iv
Tr. ferri chl. . . . .	m ill to v
Tr. nucis vom. . . . .	m ill to v

The O'Dwyer tubes were removed in two or three days; only one had to be replaced. The average time of wearing tubes in Dillon Brown's<sup>2</sup> 87 recoveries treated without antitoxin was six days. Antitoxin has apparently shortened this period. If it accomplishes any good, it does it in forty-eight hours, so I think it best to remove tubes soon after that period, and replace them if needed.

CASE I. A. B., one year and five months old, was a case of broncho-pneumonia with laryngeal obstruction. The O'Dwyer tube relieved the asphyxia. Antitoxin was used before it was known that Klebs-Löffler bacilli were absent. Death in fourteen hours.

CASE II. M. B., one year and eight months old. This child was seen late in the disease. His condition

<sup>1</sup> Abstract of paper read before the Worcester Medical Association, February 12, 1896.

<sup>2</sup> New York Medical Journal, March 9, 1889; American Journal Medical Sciences, April, 1891.



was very unfavorable at the time of intubation by reason of sepsis, high temperature and suppression of urine. The next day the temperature ranged from 104° to 106°. Death occurred on the third day from sepsis. There was a mixed infection of Klebs-Löffler bacilli, streptococci and staphylococci.

convulsion ensued in ten minutes; coma returned; and the child died in a convulsion one hour later. Death probably due to sepsis.

CASE VIII. E. T., four years old, was a severe case at the beginning, but recovery was very rapid. Albuminuria present.

Date.	Name.	Age.	Sex.	Intubed.	Tube Worn.	First Injection of Antitoxin.	Total Am't of Antitoxin.	Membrane Disappeared.	K.-L. Disappeared.	Urine.	Urticaria.	Method of Feeding.	Kind of Infection.	Termination and Cause of Death.	Complications.
1896 Jan. 28,	A. B.	1 yr. 5 mos.	F.	4th	14 hrs.	4th day.	12 c.c.	..	..	Not examined	..	Nasal tube	Streptococci	Death from broncho-pneumonia	Sepsis.
1896 Dec. 7,	M. B.	1 yr. 8 mos.	M.	6th	2½ dys.	5th day.	30 c.c.	..	..	Suppression	..	Inversion	Mixed	Death from sepsis	Convulsions.
Mar. 6,	E. G.	2 yrs.	F.	4th	3 dys.	6th day.	25 c.c.	None seen	13th day	No albumin	No	Nasal tube	K.-L.	Recovery	..
Nov. 18,	C. M.	2 yrs.	F.	4th	2 dys.	4th day.	30 c.c.	6th day	11th day	No albumin	Yes	Inversion	K.-L.	Recovery	Bronchitis.
Oct. 28,	L. T.	2 yrs. 4 mos.	F.	3d	7 dys.	3d day.	25 c.c.	..	..	Not examined	..	Inversion	K.-L.	Death from asphyxia	..
Dec. 15,	M. W.	3 yrs. 2 mos.	F.	3d	2½ dys.	4th day.	14 c.c.	6th day	9th day	No albumin	No	Nasal tube	K.-L.	Recovery	..
Apr. 27,	M. R.	4 yrs.	F.	2d	2 hrs.	2d day.	10 c.c.	..	..	Not examined	..	None	K.-L.	Death from sepsis	Convulsions.
Sept. 19	E. T.	4 yrs.	M.	3d	2½ dys.	2d day.	20 c.c.	6th day	9th day	Albumin	Yes	Nasal tube	K.-L.	Recovery	..
Oct. 22,	C. C.	4 yrs.	F.	3d	3 dys.	4th day.	48 c.c.	6th day	9th day	Not examined	No	Inversion	K.-L.	Recovery	..

CASE III. E. G., two years old, was the only purely laryngeal case; and although the antitoxin was injected late, the patient made a rapid recovery.\*

CASE IV. C. M., two years old. This case was complicated by a bronchitis at the time of the intubation, which kept the respiration after operation at 40 and the pulse at 150. The tube, however, relieved the cyanosis. It was worn two days. On removal of the tube the respiration was labored for about one hour, but the tube did not have to be replaced. Convalescence was uneventful.

CASE V. L. T., two years and four months old. The relief (by intubation) in this case was perfect. After two and one-half days the tube was removed with great difficulty, owing to the difficulty of reaching the tube with the extractor. The tube had to be replaced three hours later. After four days more the tube was again removed with great difficulty, but had to be immediately replaced. Twelve hours later the tube became blocked, and the parents allowed the child to die without sending for assistance. This patient was the only one of the series who was not fed by the physician.

CASE VI. M. W., three years and two months old. As soon as the asphyxia was relieved by intubation, this case proved to be mild. Tube worn two and one-half days. Recovery rapid. This patient could not be isolated from the other six children of the family. They had immunizing doses of one or two cubic centimetres of antitoxin, and all escaped diphtheria.

CASE VII. M. R., four years old, was a hopeless case. When first seen was moribund, having been ill but thirty-six hours. Very septic, unconscious and cyanotic. Strychnia, one-fortieth of a grain, and brandy hypodermatically, and intubed at once. Stitch put through tongue, and tractions made on tongue at each inspiration. Consciousness returned, cyanosis disappeared and pulse improved. One hour later ten cubic centimetres antitoxin (Gibier 1-50,000) were injected. A

CASE IX. C. C., four years old, was a severe case. Had a rapid and uneventful convalescence. This child was fed by Casselberry's method of inverting the patient.

## Reports of Societies.

### THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

REGULAR meeting, March 17, 1896, the President, DR. JAMES R. CHADWICK, in the chair.

DR. M. H. RICHARDSON read a paper entitled

REMARKS UPON INTESTINAL OBSTRUCTION FROM KINKS AND FLEXURES AS THE RESULT OF PELVIC OPERATIONS AND INFLAMMATIONS, WITH ESPECIAL REFERENCE TO HYSTERECTOMIES.<sup>1</sup>

DR. F. D. DAVENPORT said that in cases of the removal of pelvic tumors where a broad base is left he is in the habit of applying the actual canterly to the stumps, and quoted the results of German experiments upon animals as showing its good results in the way of preventing adhesions. He said that Martin recommends the use of sterile oil for the same purpose. Dr. Davenport thinks that the uniform use of the Trendelenburg posture is of great importance in preventing the formation of adhesions, by the lessened handling of the intestines which it permits. He believes the affection which was the subject of the paper to be very rare.

DR. EDWARD REYNOLDS was interested in the question of how far we can rely on the use of gauze packing to prevent the intestines from prolapsing into the healing wound after vaginal hysterectomy, and in this connection quoted a case of salpingectomy which illustrated the extent to which aseptic gauze may occasionally be used in the abdomen without leading to the

\* Boston Medical and Surgical Journal, April 25, 1896.

<sup>1</sup> See page 32 of the Journal.

formation of adhesions. In that case he had been obliged to reopen the wound and pack the pelvis with gauze for secondary hemorrhage; was obliged, on account of the low condition of the patient to leave the gauze *in situ* for three days, and on removing it saw the intestines roll forward into the pelvis, apparently wholly non-adherent to each other. Dr. Reynolds asked the reader whether in the operative treatment of kinks and flexures it would be possible to render the separation of the gut more easy by first straightening out the distal portion with the hand in order to relieve the valvular enclosure and so permit the proximal coils to empty themselves before the separation was attempted.

DR. RICHARDSON replied that this might be possible, but that he thought it would be difficult to hold the coil in position long enough to permit any complete emptying.

DR. F. W. DRAPER had never seen this condition on the post-mortem table.

In closing the discussion, DR. RICHARDSON said that the drag on the mesentery was an important element in the formation of valvular closure in these cases. He was much surprised that Dr. Draper had never met with the condition, but himself believed it to be rare. He has of late given up the use of the cautery in abdominal cases. In preparation for this paper he had looked up the whole literature of prophylaxis by the use of chemicals, and believes it safe to say that there is now a consensus of opinion against their use.

DR. G. H. WASHBURN read a paper on

#### CELIOTOMY FOR INTESTINAL ADHESIONS.<sup>2</sup>

### AMERICAN MEDICAL ASSOCIATION.

FORTY-SEVENTH ANNUAL MEETING, ATLANTA, GA.,  
MAY 5, 6, 7 and 8, 1896.

#### FIRST GENERAL SESSION.

THE Association met in the Grand Opera House on May 5th, and was called to order by the President, DR. R. BEVERLY COLE, of San Francisco, Cal., at 10.40 A. M.

Prayer was offered by the REV. DR. McDONALD, after which addresses of welcome were delivered by DR. FRANK M. RIDLEY and HON. JOHN TEMPLE GRAVES.

Announcements were then made by the Chairman of the Committee of Arrangements.

#### ADDRESS OF THE PRESIDENT.

This was delivered by DR. R. BEVERLY COLE, of San Francisco.

He stated that fifteen years ago he was made the first Vice-President of the Association, his superior officer being Dr. L. A. Sayre.

Regarding the American Medical College Association, President Cole said that it had within the past two years brought about great changes in the desired direction. It must be admitted that improvement had been effected, but very slowly, and the usage of many of the schools to evade the laws established by the Association is so general that the good result is small, and the manifest reluctance of so many now within

the organization to embrace the last advance, namely, the adoption of the four years' requirement, gives but little promise for the future. Just so long as the examinations for matriculation are conducted by members of the faculty of medical schools, just so long will evils continue; and so long as the professional examinations for degrees are conducted by interested parties, just so long will the ranks of the noblest profession be filled with uneducated, untrained, so-called doctors.

Relative to making examinations for life-insurance companies, he said that no man qualified to make a thorough examination, such as is required by insurance companies, if he be properly imbued with the value and importance of his services, will, or can assume the responsibility attaching to his function as an examiner without an adequate return. Surely the fee of five dollars was small enough, and the offer of any less sum is simply an insult to the educated physician and a bid for cheap, unscientific service, which can be obtained from the ranks of the unskilled and irresponsible. Let every examiner plant his foot and decline employment without adequate compensation; let it be published to the world that certain companies employ incompetent men, or paying cut fees receive cut services, and very soon they will discover their mistake and be brought to the realization that the best and most skilful services command the best prices.

Another question of grave importance, and one which he thought the Association should take cognizance of and suggest a remedy for, was the total absence of reciprocity between the United States and foreign countries as to laws governing the right to practise. Why Americans should be required, when taking up their abode in Germany, Great Britain, and even in the territory of our first cousin, Canada, to undergo an examination preliminary to securing a license, whilst our portals are floodgates through which every country of the earth pours its surplus of medical men — or rather, to put it more correctly, why our country should receive with open arms, without hindrance, the excess of product of foreign schools without requiring of them the same as required of us, he could see no reason; and he was distinctly of the opinion that the time had arrived when we should be heard and something done to arrest the strides of this rapidly growing wrong.

The claim advanced by Cyrus Edson of having discovered a cure for tuberculosis in what he styles aseptolin, is one that naturally attracts attention and should be thoroughly tested. Let us hope for better results than were obtained from Koch's tuberculin. It is to be regretted that men of the character and well-known scientific attainments and honesty of purpose of these should allow a description of what seems to them to be valuable to find its way into the secular press, there to be discussed by unscientific minds before it has been thoroughly experimented with by its authors or others capable of instituting and of observing the results of properly conducted tests.

He had noticed with inexpressible pleasure the action taken by the Association at its last meeting, together with the hearty support at the hands of the State Society of Pennsylvania, so far as the advertising columns of the *Journal* are concerned. In this case the reform commenced at home, and Dr. Cole said we should carry it further and apply it to individuals.

<sup>2</sup> See page 41 of the Journal.

Equally gratifying is the effort now being made, asking Congress for an additional member of the Cabinet, who shall be known as the Secretary of Public Health, and who shall be head of a department to be known as the Bureau of Health, which shall have general charge of health matters as well as statistics. Such a department would be of incalculable utility and value, and the measure should by all means possible be vigorously pushed forward.

While the year just passed had been marked by several important discoveries of scientific value, and the usual advance in the line of medicine and surgery had been made, yet he feared that the tendency to push surgery to the exclusion or neglect of medicine was becoming glaringly conspicuous. It would seem that every tyro imagines that surgery offers the quickest route to success, and that fame is to be attained only through blood. Hence every case the symptoms of which are directed to McBurney's point, was necessarily a case of appendicitis, for which the only sovereign remedy was the knife; or if it be a woman, and her suffering is referred to the ovarian region, or she has a fibroma, very small and barren of symptoms of importance, not only must she be subjected to celiotomy at once, but in nine cases out of ten is her uterus, or uterus and ovaries, sacrificed, thus unsexing her without the slightest effort being made to spare these organs and preserve to the woman her distinguishing function. If the same practice prevailed to emasculate every man who might have a neurosis of the cord and neighboring organs, there would be fewer operations than are now done on women for no greater cause.

The mere fact that the improvements and advancements in surgical procedures make them relatively safe, should not be advanced as an argument. We should look with suspicion upon one who claims, that as no use can be assigned to the appendix vermiformis, it should, upon the slightest provocation or excuse, be removed. Is it not time that a halt should be called, and that such cases should be assigned to those who are expert in diagnostic technique as well as surgical procedures. Can any law of either God or man be found to justify oöphorectomy or hysterectomy except under the most dire conditions?

Following the delivery of Dr. Cole's address, the privileges of the floor were extended to visiting delegates from other bodies.

A memorial to the Medical Association of the District of Columbia was introduced, appealing for an expression of opinion of the American Medical Association on the subject of vivisection; and on motion a committee was appointed to report on the memorial.

DR. REED, of Ohio, then introduced a resolution which provided for the appointment of delegates to the Second Pan-American Medical Congress, which is to be held under the auspices of the Mexican government. The resolution was adopted.

A preamble and resolutions from the Philadelphia County Medical Society were read, asking that the next meeting of the Association be held in that city. The resolutions were referred to the Committee on Nominations.

On motion of DR. HOLTON, of Vermont, a committee of five was appointed to consider the recommendations of the President's address.

PRESIDENT COLE appointed on the committee to consider the subject of vivisection, Drs. Senn, Gaston, Osler, Gould and Roswell Park.

## SECOND GENERAL SESSION.

May 6th. Called to order by the President.

The Secretary read the names of the members of the Nominating Committee.

An invitation from the Louisiana State Medical Society was read, inviting the members of the Association to attend its next meeting, to be held in New Orleans. On motion the invitation was accepted.

VICE-PRESIDENT LE GRAND appointed the following committee to consider the recommendations in the President's address: Drs. N. Senn, Alouzo Garcelon, Joseph Taber Johnson, E. S. Lewis and Dudley S. Reynolds.

On motion of DR. COCHRAN, of Alabama, the Committee on National Department of Public Health was increased so as to include one member from each State.

The Address on Medicine was delivered by DR. WILLIAM OSLER, of Baltimore, Md. He selected for his subject

### THE STUDY OF THE FEVERS OF THE SOUTH.

He said that humanity had but three great enemies—fever, famine and war—of which by far the greatest, by far the most terrible, was fever. It is worthy of comment that three of the greatest benefits conferred on mankind, beside which it would be hard to name three of equal importance, have been in connection with the fevers—the introduction of cinchona, the discovery of vaccination, and the announcement of the principle of asepsis. The differentiation of special forms of the continued fevers, and particularly that of typhoid, is one of the most interesting chapters in medicine.

It is a very gratifying sign to notice the attention which has been given of late to the subject of typhoid fever in the South. Some years ago a good many physicians resented the imputation that the disease to any extent prevailed in the Gulf States. The speaker had been in the habit for several years of reading the reports of the discussions on this subject at the New Orleans Parish Medical Society, and they had been interesting as showing a progressive development of knowledge, such as comes to all of us with fuller study of any problem. Enteric fever presents no constant picture. On the contrary, scarcely any disease has a more varied symptomatology. The fever may be said to be invariable, though afebrile cases are not unknown; but in the features of onset, in the length of its course, in the presence or absence of symptoms regarded as cardinal (such as rose-spots, diarrhea and splenic enlargement), typhoid fever is so uncertain that the diagnosis is often dubious.

Advances in the treatment of fevers, and especially of typhoid, have not kept pace with the rapid progress in our knowledge of the etiology. Think of the misery, the tediousness, the discomfort of a typhoid case with three relapses; think of the bleeding, the blistering, the purging, from which at least our fever patients of to-day are free! Contrast the old-time treatment with the quiet, the care, the gentle nursing, the scrupulous cleanliness, the abundance of cold water to drink, and fresh air which typhoid-fever patients of to-day receive.

He would claim the privilege of a faddist to abuse roundly other faddists who did not swim in his puddle. As a strong advocate of hydrotherapy, he took especial pleasure in denouncing as heretics of the worst possible stamp the advocates of the so-called antiseptic and

abortive methods of treatment of typhoid fever. He would place the man who does not, for this purpose, also give a purge, in a limbo just a little less hot, as he probably does a little less harm. Scarcely a week passes in which the speaker does not receive a temperature chart of some case of typhoid fever which has terminated spontaneously on the twelfth or fourteenth day, as a triumphant demonstration of the value of drugs, which from his point of view might as well have been given *per cutem* in the tub. At present he is so wholly opposed to cold-water practices that he confesses to be anything but an impartial critic. The advocates in this country for the abortive and antiseptic plan of treatment must bring forward a much stronger body of evidence than has been presented before they can hope to carry conviction to the sceptic. To assert an abortive treatment of typhoid in a case in which on the thirteenth day of the illness and on the seventh of the treatment, a patient died of intussusception, "cured of his typhoid fever on the seventh day of treatment," so it is stated, when the autopsy showed "the characteristic and extensive ulceration of Peyer's patches, and tumefied mesenteric glands," is to talk a language unintelligible to an educated medical man, and is nothing short of midsummer madness.

Dr. Osler said that full clinical histories should be furnished of typhoid-fever cases. A man who wishes to contribute to the subject should not be too busy, not only to make a careful, critical study of the symptoms, but to jot them down in some order, so that at least they may be intelligible to others.

The second point is the necessity of obtaining autopsies in fatal cases. We all appreciate how difficult this is in private practice; but in determining the nature of obscure typical cases of fever, it is absolutely essential. There is not a hospital in the country in which the determination of the nature of an obscure case of fever is not settled by the autopsy alone.

Thirdly, it is essential that observers who undertake to study this question with thoroughness should approach it with a full acquaintance with the varieties of the malarial parasites, and with an accurate knowledge of bacteriological technique.

To us, as a profession, belongs the chief glory of the century. Enormous as has been the advancement in material prosperity, and widespread as has been the diffusion of benefits from the development of the physical sciences, they cannot compare with the progress which has been made in the relief of suffering, and in the prevention of disease. Our work here ranks among the most memorable achievements in the history of the race. Fever in its varied forms is still with us, and the century has seen in connection with it but one discovery of the first magnitude, but it is of almost equal importance to know that the way has been opened, and that the united efforts of many workers in many lands are day by day disarming this great enemy of the race.

(To be continued.)

OWING to the low social standing to which medical officers in the British army are condemned, there has been an unusual lack of candidates at recent examinations. Instead of removing the difficulty by recognizing the doctors as gentlemen and soldiers, it is proposed to tempt more candidates by lowering the standard of requirements. — *Medical Record*.

## THE BOSTON Medical and Surgical Journal.

THURSDAY, JULY 9, 1896.

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### PRESENT STATUS OF EXPERT TESTIMONY.

#### THE NEED FOR A REFORM.

IN the recent trial of Mrs. Alice Fleming, of New York, for the murder by acute poisoning of her mother, Mrs. Evaline Bliss, we have another illustration of the inadequacy to produce satisfactory results of the present system of medical expert testimony, and of the need of some better system, whether by a board of competent experts appointed by government, or some other improvement on the present medico-legal machinery of the courts.

In this case the prosecution seems to have made out a sufficient motive for the murder, supposing the death to have been due to poisoning. A competent chemist testified to having made a careful autopsy in accordance with instructions from the coroner, and to have found large quantities of arsenious acid in the stomach of the deceased — much more than enough to have caused death. To rebut this testimony, a new issue was virtually forced on the court, and the chemist was confronted with the accusation of having himself put into the stomach the arsenic which he claimed to have found there, in order to compass the death of Mrs. Fleming! This charge which was based on an alleged statement of Dr. Scheele (denied by him) that he "would find enough arsenic there to convict her" (meaning the defendant, Mrs. Fleming), certainly had weight with the jury in leading them to discredit the testimony of the witness. It was said to be "a put-up job" on the part of Dr. Scheele, and the battle waged hot over this for some time.

The symptoms of the last sickness were very much like those of acute poisoning by arsenic; but, to oppose this conclusion, medical testimony was produced to show that the deceased was a victim of Bright's disease, and probably of uremia, to which the pain, vomiting, etc., of the last sickness were ascribed. It was claimed that certain chemical reactions which the district attorney's chemists said were due to the presence of arsenic might have been the result of "ptomaines,"

or even of an accidental adulteration by antimony of some bismuth powders prescribed by the attending physician.

The jury had been carefully selected by a system of exclusion—intelligent men who had formed an opinion by reading the papers being rigorously rejected; and what with the supernal audacity and adroitness of the counsel for the defence, the hopelessly contradictory character of the medico-legal testimony, and the too-successful attempt to discredit one principal expert witness, the jury were thrown into inextricable confusion; the trial (which is said to have cost the State nearly twenty thousand dollars), resulting in a verdict for the defendant.

The *New York Sun*, in commenting on this trial, asks this pertinent question: "Can there be any duty enforced upon the members of the bar greater than that of moving for a drastic change in the laws and court practices now permitting these disgraceful occurrences?"

Although the Fleming murder trial is a flagrant example of one of the most unpleasant phases of our present laws governing the examination of expert witnesses, we must remember that it is much easier to find fault with the present system than to suggest a remedy which would correct the abuses without introducing others still worse. We may refer our readers to Judge Barker's address on this subject before the Massachusetts Medical Society at the annual dinner last month,<sup>1</sup> in which he brought forward the fact that the establishment of a constituted board of medical experts, who alone were to be authorized to testify in medico-legal cases, would contravene the essential right of any litigant to call whosoever he pleases to testify in his behalf, a right upon which the whole system of trial by jury is founded. It is difficult to see how such a step could be taken without changing the whole system, and we do not know that such changes would not bring still greater abuses than the ones they were designed to correct. The monopoly of all expert testimony, and such testimony would have to be well paid for, would mean that positions on such a board, unless the appointments were made under civil-service rules, would be sought after by many physicians of all grades of professional standing and moral character. These appointments would also be made by laymen, whose ignorance on medical subjects and of the relative qualifications of physicians is well known. It may certainly be questioned whether any court could have the right to exclude all physicians except those on a certain board from giving expert testimony when it certainly cannot prevent a litigant from calling any non-medical witness he chooses.

Although, as Judge Barker said, the drawbacks of our jury system are evident enough, especially when presented as forcibly as in the Fleming trial, there is little evidence to show that they would be corrected by the appointment of a board of medical experts. The cross-examination of Dr. Scheele would have been

just as unfair if he had belonged, as he might have, to a board of experts appointed by the court.

Under the present system, the character and temperament of the presiding judge has much to do with the extent to which lawyers are allowed to go in their questioning of medical witnesses. Certain judges permit only fair and pertinent questions to be asked, and, unfortunately, it cannot be denied that others allow the attorneys to go to outrageous lengths in their efforts to vilify witnesses for their opponents.

While the lawyers are allowed to conduct themselves as these learned judges permit, there can be but little advantage to be gained by the appointment of boards of experts. The remedy for such abuses as were brought out in the Fleming murder trial is a law imposing a severe fine or imprisonment on any judge who fails to keep counsel within proper limits!

#### EIGHTEENTH CENTURY PHARMACY.

A WRITER in the *New York Evening Post* has been reading a family heirloom of household medicine of the last century, a perusal of which, as contrasted with any modern work of domestic pharmacy, is enough to show the changes of the past one hundred and fifty years in methods of prescribing among the laity.

More than three-fifths of the plants employed are the simples of long repute, noted in Girarde and Culpepper. Of proved excellence was the "Green ointment." Wormwood, feverfew, rue, French balm, ground-ivy, houseleek, mullein, wild celandine, garden celandine, "a handful of each," were steeped successively in water, in sweet cream, and in fresh butter, while the addition of mutton tallow, rosin, and beeswax converted the soft unguent into bars of the "green salve," "extraordinary good for swelling in a part." There is an old garden now run to weeds where this group of notable herbs grew together in readiness for the yearly making of pots of this green ointment, known the country over.

Many of the minute directions indicate household conditions no longer existing, as in the remedy "for a bruise."

For a Bruise: Take a Handfull of Mugwort and a Handfull of Catnip & a Handfull of Wormwood, pound it with salt butter and simmer it with a Gill of Rum, and card a Bat of tow. Lay the Herbes upon the Tow and bind it upon the Bruise.

A Plaister for the Rheumatism: Take Unicorn Root and Colts-foot stamped fine with Rosin and Barrow fat and beeswax melted together, and put on the pain.

For a Dog's bite, Hog's bite, or a Rusty Nail: Take a Handfull of black Wool & grease with Bacon grease & get a Kettle of Coals & hold the Wound over the Coals. Cover it with a Blanket, put the Wool in the Kettle and when it is all dried away, then put a plaister of Turpentine on the Scar.

To Make an Ointment to Search Sinews: Take Marsh Mallice & All Heal, a pound of grease of Bacon, 1 lb. of Dog's grease, 1 lb. of Spignard, 1 lb. of Sullendine, pound the Spignard and stue them well together, and when you bathe the sinews take two Spoonfulls of the ointment and one of the Oil of Roses and simmer them together.

For a Person that their Inwards waste, or for a bad Fever: Take Brook Liverwort and Upland Liverwort, make a strong Tea and Drink it well.

<sup>1</sup> See the Journal for June 18th, p. 617.

For a Tooth ach if the tooth be Hollow: Pound Fennell roots & put in the tooth, & it will have due effect upon the Marrow.

For Crakt Hands: Take Brook Liverwort, make a Tea. Drink it well and put Ear wax in the crackes.

For Cancer Humours: Take new oysters and put them on the Part affected.

"The orange juice of celandine and the yellow barberry were deemed a logical remedy for the jaundice, since 'by the icon or image of every plant the ancients found out its virtues.'"

Nothing is more remarkable than the prevalence of cutaneous or scorbutic ills; fully three-fourths of the remedies are for the cures of "an anguish in an old running sore," "to eat dead flesh out of an ulcer," "to dry a pestilent humor in the blood," or for some similar ailment.

The preparations are in various forms: unguents, cataplasms, electuaries, and apozems; seldom anything so simple as a mere infusion. Often a dozen plants are combined in a single decoction.

"Turpentine, rosin, Burgundy pitch, and beeswax entered largely into the salves and plasters, in composition with various fats, specifically named (fat of lamb's kidney, barrow fat, skunk grease, dogs' grease, sweet cream, unsalted butter) and oils (olive oil, train oil, and neatsfoot oil). Spices and aromatic herbs were generously used, whether for their medicinal properties or for their ameliorating savor is uncertain. Honey was preferred to sugar in the making of syrups. The decoctions were further strengthened by adding cider, ale, or metheglin, claret or Madeira, or 'Good old Rum' of Jamaica or of Barbados, and the patient is told to 'drink a little every now and then,' or to 'take a drink whenever so inclined.'"

What with prescriptions for "bad humors," and "angry sores," for killing wens, and "against a gangrene when it turns black," "for scattering abscesses," and "to cleanse foul ulcers," the book from which these extracts are taken is, according to the writer in the *Post*, "a dark record of the sanitary state of the last century."

#### MEDICAL NOTES.

**AMERICAN PUBLIC HEALTH ASSOCIATION.**—The twenty-fourth annual meeting of the American Public Health Association will be held at Buffalo, N. Y., on September 15, 16, 17 and 18, 1896.

**THE CONGRESS OF FRENCH SURGEONS.**—The Tenth Congress of the French Surgical Association will be held at Paris, October 19th to 24th. Professor Terrier will preside. The two subjects before the Congress for discussion will be: (1) The Surgical Treatment of Club-Foot, the discussion to be opened by M. Forgue, of Montpellier; (2) The Treatment of Prolapse of the Genital Organs, the discussion to be opened by M. Bouilly, of Paris.

**THE SUICIDAL USE OF A QUEUE.**—The Hong Kong correspondent of the *British Medical Journal* relates that recently a coolie, who had been engaged in sanitary work connected with the plague, and had,

with others, been imprisoned for receiving bribes, committed suicide in his cell by hanging himself with his own hair. Twisting his queue round his neck he attached it to a ventilator, and with a drop of a single foot managed to dislocate his neck.

#### BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—During the week ending at noon, July 1, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 68, scarlatina 20, typhoid fever 13, measles 47. For the week ending July 8th, the following were reported: diphtheria 82, scarlatina 24, typhoid fever 8, measles 83.

**THE CULLIS CONSUMPTIVES' HOME.**—Mayor Quincy has returned without his signature the order sent him by the Board of Aldermen requiring the removal of the Cullis Home from its present situation, qualifying his refusal to sign by the statement that he is not quite sure of the legal right to enforce its removal, or of the wisdom of such a course even though legal. He asks for more time for the consideration of these points, and does not wish his present action to be considered final.

**A BEQUEST TO THE LYNN HOSPITAL.**—By the will of the late Elizabeth C. Newhall of Lynn, \$1,500 is left to the Lynn Hospital.

**UNIVERSITY OF VERMONT MEDICAL SCHOOL.**—The graduating exercises of the Medical School of the University of Vermont were held at Burlington, Vt., on July 6th.

**THE BANGOR GENERAL HOSPITAL.**—At a recent meeting of the corporation of the Bangor General Hospital, it was voted to change the name of the hospital to the Eastern Maine General Hospital.

#### NEW YORK.

**GOOD HEALTH IN NEW YORK CITY.**—The death-rate of New York City for the six months ending June 30th was 22.32 per thousand of the estimated population. This is the lowest rate recorded since 1890. In 1891, the total number of deaths reported during the first half of the year was 23,495; in 1892, 22,953; in 1893, 23,734; in 1894, 21,555; while in the year 1896 the total number was 21,585. The number of deaths in the first half of 1894 was actually less by 30 than in the first half of 1896; but the rate per thousand of the population was 23.83, as against 22.32. In a communication to the Mayor transmitting these figures, President Watson, of the Board of Health, says: "Only a rash man would assign any specific reason for the general healthfulness of the city. Comprehensively speaking, I think it is due to the generally better sanitary condition of the city, the improvement of the milk-supply, asphalt pavements on the East Side, and cleaner streets." As contributory factors in the reduced mortality, he might perhaps have added the general use of antitoxin in the treatment of diphtheria (always a prominent element in the causes of death in

New York), and the unusually cool weather that prevailed during the month of June. If it had not been for the exceptional prevalence and fatality of pneumonia during the greater part of the past six months, the showing would have been even more favorable.

**A NEW BUILDING FOR THE GOUVERNEUR HOSPITAL.**—On June 30th the Sinking Fund Commissioners ordered the preparation of plans for a new \$200,000 building for the Gouverneur Hospital, which is situated down-town, on the East Side. It will stand just east of the present hospital building, and will front on Water and Front Streets and on two proposed new streets on the other two sides.

**AN APPROPRIATION FOR BROOKLYN HOSPITALS.**—On June 24th, the Brooklyn Board of Estimate appropriated \$100,000 for hospitals and dispensaries, and allowed \$247,300 for the use of the Commissioners of Public Charities during the fiscal year commencing July 1st.

**THE BERTILLON SYSTEM AT SING SING.**—The work of establishing the Bertillon system of identifying criminals has just been begun at Sing Sing prison. On July 3d, Mr. George Porteous, formerly the chief of the identification bureau at Chicago, arrived at Sing Sing with a supply of the instruments used for measuring bones, cranial angles, etc.; and after instructing the officials there in the manner of measuring criminals and classifying the descriptions, he will proceed to Brooklyn, where it has been decided to introduce the method into the Kings County Penitentiary.

**THE RELATIONS OF PHYSICIANS TO HOSPITALS.**—At a meeting of the New York County Medical Association held June 15th, the Committee on Relations of Physicians and Hospitals made, through Dr. D. H. Stewart, the corresponding secretary, a further report, which was in part as follows:

"The Committee desires to report that, though it has used its best endeavors to secure a just balance of evidence in the hospital patronage affair, yet the testimony given before our body has been given entirely by the profession, and not by the colleges. The faculties have ignored our communications and have kept strangely silent. Yet the very fact of their casting honorary positions broadcast among those physicians who were unjustly removed from places long and ably filled is circumstantial evidence that injustice was done at the instigation of the colleges, and that peace offerings are now necessary.

"The campaign of the colleges is one of deception, and in order to make such a campaign successful it was necessary to ensure no medical man being appointed a Commissioner of Public Charities, as the whole scheme would have been very transparent to a physician. Several members of the faculties waited upon the Mayor and urged that 'no doctor should be a commissioner, as that would break up the harmony between the colleges and the Board.' Having thus rendered deception less easy of discovery, they proceeded to hoodwink the Mayor and the Board, making

many statements which you have seen exposed as perfectly ridiculous by the medical journals.

"The latest plan is to give a sop to complainants, for quieting purposes, and then to impress the Commissioners with the idea that the profession was satisfied. These sops are appointments as consulting physicians. Of course, as is well known, such an appointment is only a superannuation and practically is of no value to any one; but the idea seems to be to convey to the Commissioners the impression that injustice has been righted, while concealing the fact that the appointees are not returned to their old places, but are expected to be satisfied with positions that exist only on paper.

"We had hoped to be able to give definite news from the Commissioners of Public Charities, but the following letter is all they think best to have embodied in this report:

"NEW YORK, June 11, 1896.

"By direction of the Board I have to acknowledge the receipt of your letter of the 9th inst., and to inform you that this Board is of the opinion that the questions under consideration are of such importance as to warrant careful and thorough examination and consideration, and that at the present time they have nothing to communicate. Yours truly, H. G. WEAVER,

"Secretary Board of Public Charities."

## DISCELLANP.

### PREAMBLE AND RESOLUTIONS PASSED BY THE AMERICAN SURGICAL ASSOCIATION.

DETROIT, MAY 27, 1896.

Whereas,

(1) The American Surgical Association has learned that the Committee on the District of Columbia in Congress has reported favorably a bill adverse to the practice of vivisection in the District of Columbia, and

(2) The passage of such a law will put an end to all the experimental work in the Government Laboratories at Washington from which have emanated important and useful discoveries, especially as to the diseases of animals, and

(3) The passage of such a law by Congress will be used as a lever in promoting the enactment of similar laws in others parts of the country and so do double harm.

Therefore, *Resolved*, by the American Surgical Association,

(1) That to their personal knowledge the marvellous progress of surgery, especially within the last twenty-five years, is due very largely to experiments upon animals, and the continuance of such experiments is absolutely essential to the further progress of surgical science.

(2) That in their opinion the humanity of the entire profession is too well known and too constantly and conspicuously shown in their enormous charitable and kindly work to allow the assertion that they would countenance the practice of cruelty or the infliction of needless pain in such experiments, to be believed by the American people or their representatives in Congress.

(3) By reason of this very humane sentiment, this Association protests against the passage of the bill in question, because it will be a cause of untold cruelty to both man and animals by arresting to a great extent the beneficent progress of surgery.

(4) That a copy of these resolutions be sent to the President of the United States and to the Senate and House of Representatives.

W. W. KEEN, }  
H. L. BURRELL, } Committee.  
JOS. D. BRYANT, }



## EXPLORATIONS OF AN AMERICAN PHYSICIAN.

DR. DONALDSON SMITH,<sup>1</sup> of Philadelphia, recently addressed the Drexel Institute regarding his adventures in Somaliland.

"In July, 1895, after many hardships and privations, the explorer reached the eastern shore of Lake Rudolf, near the northern end, having passed through a country that no white man had ever set foot in before. On July 19th, leaving the caravan at the lake, Dr. Smith turned north to explore the Nianann River, which empties into Lake Rudolf. He was taken with fever and turned back, but set out a few weeks later and explored the country one hundred miles north. On his return to the lake the party journeyed to the southern end, incidentally discovering that the River Bass, which a former explorer is said to have discovered emptying into Lake Rudolf, does not exist. A peculiar source of discomfort to the party was the frequent invasion of rhinoceroses, these animals taking particular umbrage at an exploration of their native haunts, and venting their spite by driving the human beings into the thorn bushes for refuge. Four carriers were injured and two camels killed by these beasts. One of the carriers had an arm bitten off by a crocodile, and Dr. Smith amputated the rest of the injured member. The explorer discovered a mammoth cave formed on the River Webi by the erosion of the rocks. The roof was supported by great pillars, shaped like double cones, and so regularly arranged that they seemed to have been carved by the hand of man. He also visited a small town beyond the borders of Somaliland, built by the Arabs many years ago, though geographers say that the Arabs never penetrated so far. It was built and ruled originally by Sheikh Huslin, a Mahomedan saint, who came there two hundred years ago. It was here that some of his followers became discontented and an outbreak occurred, which, however, was soon quelled."

## Correspondence.

## CONSUMPTIVES' HOMES ON PUBLIC PARKS.

BOSTON, June 27, 1896.

MR. EDITOR: The article of my friend Dr. Vincent Y. Bowditch, in the current number of the JOURNAL (June 25, 1896), seems to warrant a word of explanation from one who, on medical grounds, felt impelled to appear before an aldermanic committee in opposition to the proposed new consumptives' hospital at Franklin Park.

To one who, as a hospital colleague, is aware of Dr. Bowditch's own radical and thorough measures for the destruction of phthisical sputa in the wards, it might appear that if the proposed hospital could be under his watchful care, even in so exposed a position as that proposed, it could be rendered safe for the community. But when one reflects that even under hospital discipline the destruction of sputa cannot be enforced after the patient has left his bed and begun to walk in the grounds; when one considers that the proposed location for the hospital, on the Blue Hill Boulevard and upon the borders of Franklin Park and with very little land belonging to the institution, is evidently intended to afford the inmates the advantages of roaming over the five or six hundred acres which the city had set apart as "lungs" for its inhabitants; when one further remembers that the existing hospital has been for

a large part of its history carried on with simply "Faith" as its financial and therapeutic basis, and that it is not now and will not be in the future under the care of regular physicians, it does not seem so "shocking" as Dr. Bowditch found it, that this proposition should be opposed on medical grounds, even by one who, like myself, favors under proper circumstances the sanitarium treatment of the disease in question.

What has been said does not, of course, at all sanction the alarmist view which Dr. Bowditch deprecates nor the doubtless intemperate remarks of members of the laity residing in the vicinity, who may have felt that "faith without works" might be as powerless to kill bacilli as it has sometimes proved to pay bills.

Prejudiced neighbors who have objected in times past to having phthisical men lounge in their front porches and expectorate on their doorsteps, shopkeepers who have found it disagreeable to have men sitting in their meat-shops while spitting blood, have, it is to be feared, used violent terms about the poor consumptives and the institution which sheltered them, which are unjustifiable, but in the present state of human nature, not surprising. These considerations, and others affecting depreciated real-estate values, have, of course, nothing to do with pure questions of public health.

The Board of Health, being asked by the Aldermen its opinion, reported that phthisis was to be regarded as an infectious disease. The Park Commissioners thereupon protested against a large collection of phthisical persons being brought together upon Franklin Park. The Board of Aldermen voted that after 1900 no hospital for this purpose should be allowed on this site, and consequently the proposed new building will hardly be erected. This action will not, I think, work any real harm to the hospital, for in so far as its aim may be the relief of the sick poor, this purpose can be just as well carried out by a removal of the institution into the country, where a given sum of money will buy thirty times as much land as here, and where the poor victims of phthisis (in sympathy for whom I yield to no one) can receive whatever care and help the hospital may be able to afford them, without bringing danger to the many thousands of people who come daily to this magnificent park, where they are entitled to find health and not disease.

Yours truly,

C. F. WITHERINGTON, M.D.

## PRACTICAL MEDICAL USE OF THE X-RAY.

BOSTON, July 1, 1896.

MR. EDITOR: During the last month the electricians have published little about the Röntgen-ray phenomena. Edison and Tesla, having succeeded in taking photographs of the skeleton and shown the wonder to the public, have handed over the further elaboration to the medical men and have turned their attention to things more commercially interesting. In May the electrical periodicals teemed with Röntgen-ray experiments, and now they hardly mention them.

On the other hand, medical men have taken the matter up. Mr. Sidney Rowland in England, Drs. Goodspeed and Keen in Philadelphia, Dr. Morton in New York, and countless others have been reporting practical applications in surgery. Dr. F. H. Williams in Boston has pointed out the value of an inspection of diseased lungs with the fluoroscope, as well as recognition of enlargement in other viscera.

Perhaps the most striking case was that of Dr. J. Williams White, who removed by gastrotomy a jackstone impacted in the esophagus. The diagnosis was made by a Röntgen photograph, which showed the exact position of the jackstone.

Most of the medical journals of the day mention cases of more or less interest; and it seems to me desirable that all cases in a new subject of this kind should be mentioned, in order to convince those who are not directly experimenting

<sup>1</sup> Journal American Medical Association, June 13, 1896.

on it that it is a practical and not entirely theoretical discovery.

Perhaps the commonest class of useful cases is that of localizing foreign bodies. The popular impression, of which there are undoubted examples, that needles may wander about the tissues is interesting in this condition, and may possibly be proved by a series of radiographs. Against it I have two cases which show needles at practically the point of entrance after a lapse of many years. One in the wrist thirteen years after entrance, and one in the ball of the foot sixteen years after.

My list of foreign bodies comprises the following: needle in finger, wrist, foot; shoe-bead in hand; bullet in hand, wrist, forearm, knee, shoulder.

It is interesting (and unfortunate) to note that wooden splinters cannot be distinguished from the tissues. One case of a large splinter imbedded in the sole of the foot showed no sign on the plate.

Far more interesting than foreign bodies are fractures. Of these I have: Colles' fracture, both bones of forearm, olecranon, T-fracture of elbow, fracture of greater tuberosity of humerus, compound fracture of skull.

On several the diagnosis was made by the fluoroscope or radiograph, and in all the pathological anatomy was clearly shown.

The advantage of being able to look at the fracture without removing the splints is obvious. A good radiograph can be taken through an ordinary plaster bandage.

The treatment of fractures is always of the greatest importance, as these cases more than any others lead to medico-legal difficulties. If a physician can show a radiograph of the bones in good position in his splints it is the best possible evidence. On the other hand, nothing could be more convincing to the jury than a picture of the bones in bad position. A radiograph is almost a necessary record of a fracture.

Diagnoses of dislocations, though easier than fractures, are made more certain by the radiograph. I have a case of backward dislocation of the forearm combined with an old fracture of the humerus. The radiograph showed the surgeon the impossibility of reduction and influenced his decision for excision of the elbow. Another shows a dislocation of the radius.

Some tumors are explained. One of a tumor of the elbow of two years' duration, which prevented flexion beyond a right angle, shows an exostosis of the coronoid with a corresponding one on the end of the humerus; hence the inability to flex.

A tumor of the shoulder in which the diagnosis lay between an obscure fracture of the head of the humerus and a sarcoma, was decided in favor of the latter, as the upper fourth of the bone could be seen in the mass bent and eroded.

The extent of caries can be recognized if there has been a loss of bone substance. I have but two cases; one of a metacarpal and one of caries at the base of a bunion in extreme hallux valgus.

An interesting case is one of a stiff wrist following a septic hand. The radiograph shows the bones of the carpus united in a solid mass, so that there is no hope of breaking up the adhesions.

A supposed specific dactylitis in a child with enlargement of one finger shows the bone correspondingly enlarged, but of uniform density and apparently normal structure. Another of a child with contorted arms shows total absence of the radii, and hence the impossibility of remedying the deformity.

In mentioning useful cases there is a negative class of cases where foreign bodies are supposed to exist and the x-ray shows their absence. Of these I have had several, greatly to the disappointment of the patients.

If any one will look up the last numbers of the *British Medical Journal*, he will be interested to see the reports by Mr. Sydney Rowland of recent cases of "skiagraphy," and will realize how the utility of the process has been recognized abroad.

Yours truly,

E. A. CODMAN, M.D.

## THE METRIC OR THE DUODECIMAL SYSTEM.

ROXBURY, June 13, 1896.

MR. EDITOR: I enclose an item from the *Western Druggist* sent me by a friend:

"Herbert Spencer, strange to say, has ranged himself with the opponents of the metric system. During May he contributed a series of articles in the *London Times* arguing against its adoption, but favoring rather the displacement of our world-wide decimal system of numeration by one on a duodecimal basis. One prominent English publication stigmatizes the arguments advanced by Spencer, philosopher though he be, as 'moonstruck.'"

The files of the *Boston Medical and Surgical Journal* under dates of October 28, 1875, November 11, 1875, and December 13, 1877, will be found to contain three letters of mine, in which I took the identical position now held by Mr. Spencer.

The titles of these letters were: "The Other Side," "Duodecimal Arithmetic," "A Reply to Dr. Curtis."

In justice to all the disputants in this long-standing and still unsettled controversy, I hope you may think proper to publish the *Druggist's* item, with such reference as you deem fitting to the letters mentioned.

Most respectfully yours, EDW. T. WILLIAMS, M.D.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 27, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York . .	1,892,332	859	473	29.76	12.36	19.92	.12	5.04	
Chicago . . .	1,678,987	511	259	25.00	5.80	18.20	3.60	2.80	
Philadelphia .	1,164,000	498	228	22.60	6.80	16.80	1.00	4.00	
Brooklyn . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . .	560,000	—	—	—	—	—	—	—	
Boston . . .	491,206	229	76	10.56	22.00	2.64	1.76	4.84	
Baltimore . .	490,316	194	90	22.88	8.32	16.12	2.60	3.12	
Cincinnati . .	386,000	93	34	6.42	11.77	4.28	1.07	—	
Cleveland . .	314,537	117	59	25.50	9.35	17.00	2.65	—	
Washington .	275,600	146	71	26.02	14.96	21.12	1.36	1.36	
Pittsburg . .	238,617	—	—	—	—	—	—	—	
Milwaukee . .	265,000	—	—	—	—	—	—	—	
Nashville . .	87,754	50	20	20.00	14.00	10.00	4.00	—	
Charleston . .	65,165	24	—	41.60	29.12	33.8	—	—	
Portland . .	40,000	38	12	16.62	13.85	5.54	—	5.54	
Worcester . .	98,687	55	35	50.96	7.28	49.14	—	—	
Fall River . .	88,020	42	18	38.08	7.14	28.66	2.88	2.38	
Lowell . . .	84,359	21	5	28.56	9.52	23.80	4.76	—	
Cambridge . .	81,619	15	2	13.33	—	—	—	—	
Lynn . . . .	62,366	14	7	21.42	—	—	—	—	
New Bedford .	55,254	11	6	18.18	18.18	18.18	—	—	
Springfield .	51,534	12	5	14.28	—	—	—	—	
Lawrence . .	52,153	11	—	—	—	—	—	—	
Holyoke . . .	40,149	11	7	18.18	9.09	18.18	—	—	
Salem . . . .	34,437	12	4	8.33	—	—	8.33	—	
Brookton . .	33,167	7	4	28.56	14.28	28.56	—	—	
Haverhill . .	30,185	6	0	16.66	33.33	—	—	—	
Malden . . .	29,706	9	0	11.11	11.11	—	—	11.11	
Chelsea . . .	31,295	—	—	—	—	—	—	—	
Fitchburg . .	26,894	10	3	—	—	—	—	—	
Newton . . .	27,122	—	—	—	—	—	—	—	
Gloucester . .	27,663	13	2	15.38	23.07	—	—	15.38	
Taunton . . .	27,093	4	0	—	—	—	—	—	
Waltham . .	20,877	4	2	50.00	25.00	—	—	25.00	
Quincy . . .	20,712	6	6	50.00	16.66	—	—	50.00	
Pittsfield . .	20,447	7	4	42.84	—	14.28	—	—	
Everett . . .	18,578	—	—	—	—	—	—	—	
Northampton	16,738	1	1	—	—	—	—	—	
Newburyport .	14,564	—	—	—	—	—	—	—	
Amesbury . .	10,920	—	—	—	—	—	—	—	

Deaths reported 3,092: under five years of age 1,156; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 730, diarrheal diseases 509, consumption 300, acute lung diseases 229, diphtheria and croup 105, typhoid fever 39, measles 24, whooping-cough 20, scarlet fever and cerebro-spinal meningitis 9 each, malarial fever 8.

From measles New York 15, Philadelphia 3, Chicago, Cincinnati, Nashville, Worcester, North Adams and Everett 1 each. From whooping-cough New York 6, Chicago and Cleveland 3 each, Nashville and Charleston 2 each, Baltimore, Boston, Wash-

ington, Lowell and Everett 1 each. From scarlet fever New York 5, Baltimore, Boston, Fall River and Quincy 1 each. From cerebro-spinal meningitis New York 4, Providence 2, Boston, Worcester and Quincy 1 each. From malarial fever New York 4, Chicago 2, Philadelphia and Cleveland 1 each. From erysipelas New York 5, Chicago and Lowell 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,948, for the week ending June 20th, the death-rate was 17.1. Deaths reported, 3,598; measles 210, diarrhea 111, whooping-cough 111, diphtheria 71, scarlet fever 46, fever 39.

The death-rates ranged from 10.2 in Derby to 23.0 in Salford: Birmingham 21.6, Bradford 18.7, Cardiff 15.7, Croydon 11.0, Gateshead 19.6, Hull 18.9, Leeds 19.0, Leicester 16.8, Liverpool 20.4, London 16.2, Manchester 22.4, Newcastle-on-Tyne 17.0, Nottingham 13.5, Portsmouth 21.0, Sheffield 18.2.

### METEOROLOGICAL RECORD

For the week ending June 27th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.				Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...21	29.85	82	92	71	73	82	78	W.	W.	5	12	F.	O.	.03
M...22	29.22	80	89	70	76	62	70	W.	W.	11	10	O.	O.	
T...23	30.04	64	77	58	54	44	49	N.W.	N.	15	5	C.	F.	
W...24	30.26	65	72	58	58	66	62	E.	S.W.	5	7	F.	O.	
T...25	30.34	62	68	66	74	70	72	E.	S.E.	5	13	C.	O.	
F...26	30.04	70	78	61	82	82	83	S.W.	S.W.	12	10	O.	O.	.01
S...27	29.96	73	82	64	63	63	63	N.W.	S.W.	8	9	O.	C.	

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 27, 1896, TO JULY 3, 1896.

Leave of absence for two months, to take effect on or about July 8, 1896, or as soon thereafter as practicable, is granted COL. CHARLES T. ALEXANDER, assistant surgeon-general.

CAPTAIN WILLIAM B. DAVIS, assistant surgeon, will in addition to his present duties, take charge of the Medical Supply Depot in New York City, during the absence on leave of COL. CHARLES T. ALEXANDER, assistant surgeon-general.

### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 4, 1896.

L. G. HENEBERGER, surgeon, detached from the Marine Rendezvous, New York, and ordered to the hospital, Widow's Island.

E. S. BOGERT, passed assistant surgeon, ordered to the New York Navy Yard, July 2d.

T. C. CRAIG, passed assistant surgeon, detached from the New York Navy Yard, July 2d, and ordered to the Marine Rendezvous, New York.

W. F. ARNOLD, passed assistant surgeon, detached from special duty in China and Japan and ordered to return home.

H. F. PARRISH, assistant surgeon, ordered to the Naval Laboratory, New York City.

### SOCIETY NOTICES.

AMERICAN DERMATOLOGICAL ASSOCIATION. — The meeting will be held at the Hot Springs of Virginia, September 8, 9 and 10, 1896. Several papers on interesting subjects have been already promised. Dr. White will open a general discussion on the subject, "What Effect do Diet and Alcohol have upon the Causation and Course of the Eczematous Affections and Psoriasis?"

CHARLES W. ALLEN, Secretary,  
126 East Sixtieth Street, New York.

THE THIRD INTERNATIONAL CONGRESS OF DERMATOLOGY. — The third International Congress of Dermatology will meet in

London from August 4th to 8th of this year. The general programme has been published in a recent number of this JOURNAL.

There will be a museum of drawings, casts, models, naked-eye preparations, microscopic specimens, works and atlases pertaining to diseases of the skin. There will also be an exhibition of clinical cases and demonstrations of the same at 9 A. M. and 2 P. M. of August 5th, 6th and 7th, and at 9 A. M. of August 8th. Any one having anything to contribute to this department will please address Dr. Jas. Galloway, 21 Queen Anne Street, Cavendish Square, W.

There will be an exhibition of cultures and microscopical preparations of organisms connected with the skin and its diseases. Any communications in regard to this department should be addressed to H. G. Plimmer, Esq., Wunderbau, Sydenham, London.

The social side of the Congress will be: first, an informal reception at the International Hall, Piccadilly Circus, on August 3d, from 9 to 12 P. M.; second, a reception by the Lord Mayor and Lady Mayoress at the Mansion House on August 5th, from 9 to 11 P. M.; third, a dinner to the foreign members at the Hotel Cecil on August 7th.

It is advised that foreigners should arrive in London not later than Sunday, August 2d, as Monday the 3d inst. is a public holiday. Information in regard to hotels will be furnished on application to George Pernet, Esq., 77 Upper Gloucester Place, London, N. W.

GEORGE THOMAS JACKSON, M.D.,  
Foreign Secretary for the U. S.

### BOOKS AND PAMPHLETS RECEIVED.

Deformities of the Hard Palate in Degenerates. By Frederick Peterson, M.D. Reprint. 1896.

Congenital Teeth, with Three Illustrative Cases. By J. W. Ballantyne, M.D., F.R.C.P.E., F.R.S.E. Reprint. 1896.

Report upon Two Cases of Tumor of the Spinal Cord, Unaccompanied by Severe Pain. By Pearce Bailey, M.D. Reprint. 1896.

Results of Thyroid Treatment in Sporadic Cretinism. By Frederick Peterson, M.D., and Pearce Bailey, M.D. New York. 1896.

The Seventy-second Annual Report of the Officers of the Retreat for the Insane at Hartford, Conn., April, 1896. Hartford, Conn. 1896.

Jahrbuch für Kinderheilkunde und Physische Erziehung. Neue Folge. Unter redaction von O. Heubner, A. Steffen, H. v. Widenhofer. Band XLI, Heft 3 u. 4. Leipzig. 1896.

China Imperial Maritime Customs, Special Series No. 2, Medical Reports for the Year ending September 30, 1895, forty-ninth and fiftieth issues. Shanghai: Published by order of the Inspector-General of Customs. 1896.

Quain's Anatomy: Appendix, Superficial and Surgical Anatomy. By Prof. G. D. Thane and Prof. R. J. Godlee, M.S. Illustrated by 29 engravings. Tenth edition. London, New York and Bombay: Longmans, Green & Co. 1896.

The Three Ethical Codes: That of the American Medical Association; Its Constitution, By-Laws, Amendments, etc. That of the American Institute of Homeopathy and that of the National Eclectic Medical Society. Detroit, Mich.: The Illustrated Medical Co.

A Brief Description of the New Lakeside Hospital. A Case of Double Salpingo-Oophorectomy; Excessive Loss of Blood from Separated Adhesions necessitating a Second Operation within Three Hours; Infusion with Sterile Normal Salt Solution during Second Operation; Recovery. By Hunter Robb, M.D. Reprints. 1896.

Weekly Abstract of Sanitary Reports issued by the Supervising Surgeon-General, M. H. S., under the National Quarantine Act of April 29, 1878, and the Act granting Additional Quarantine Powers and imposing Additional Duties upon the Marine-Hospital Service, Approved February 15, 1893. Vol. X, Nos. 1 to 52. Washington: Government Printing Office. 1896.

A Text Book of Bacteriology. By George M. Sternberg, M.D., LL.D., Surgeon-General U. S. Army; Ex-President American Public Health Association; Honorary Member of the Epidemiological Society of London, of the Royal Academy of Medicine of Rome, of the Academy of Medicine of Rio de Janeiro, of the Société Française d'Hygiène, etc. Illustrated by chromolithograph plates and 200 engravings. New York: William Wood & Co. 1896.

Consumption; Its Nature, Causes and Prevention, with an Outline of the Principles of Treatment for all Classes of Readers. By Edward Playter, M.D. (and Medallist, Toronto Univ.) M.C.P. and S., Ont., Author of "Playter's Physiology and Hygiene" (authorized by the Ontario Education Department); editor of the "Canada Health Journal," Member Canadian Medical Association, American Public Health Association and American Academy of Political and Social Science. Toronto: William Briggs. 1896.

## Original Articles.

ON PERIODICAL NEURALGIAS OF THE TRIGEMINAL NERVE AND THEIR RELATION TO MIGRAINE, WITH SPECIAL RELATION TO THE INTERMITTENT SUPRA-ORBITAL NEURALGIA.<sup>1</sup>

BY JAMES J. PUTNAM, M.D., BOSTON.

WHENEVER investigations are being made for purposes of classification, whether in the department of natural history or in that of medicine, two tendencies are always obvious, one of which leads the investigator to recognize the resemblances between the various objects of his examination, while the other leads him to see the differences between them. These tendencies are never more noticeable than when the diseases of the nervous system are at stake, and they have frequently made themselves felt as regards the study of migraine in its relation to other painful affections, especially those which are ordinarily designated as neuralgias.

Anstie, a master of intelligent analysis, and whose writings are still sound, fresh and vigorous, defined migraine as a form of trigeminal neuralgia, having, of course, in mind simply the pain element in migraine of the common form. Thomas,<sup>2</sup> a clear-headed and intelligent observer, and various other writers, take the same view, while equally good authorities<sup>3</sup> hold that there is no excuse for confounding migraine and neuralgia with each other.

The truth is that we lack a satisfactory touchstone for each of these affections. We are ignorant of their pathology, and have no really good theory of their meaning as phenomena of nervous activity. That they present points of clinical likeness to each other is obvious, and we are likely to gain as much from tracing these out as by accentuating the points of difference between them. In my own belief, both of these painful disorders are to be interpreted as caricatures, so to speak, of physiological or quasi-physiological events. They are probably exaggerated bits of the emotional complex. The pain is only one element in both affections.

While some of the cases of supra-orbital neuralgia would be declared by many physicians to stand in no real relationship to migraine, there are other cases of very similar type, which, without greater reason, as I think, would often be simply classified as special forms of migraine.

The literature of migraine has become too unwieldy to be referred to here in detail in relation to this question, but, fortunately, it has been enriched within the past year by a summing up at the hands of Mœbius, of Leipsic, which is remarkable for its clear, comprehensive and unequivocal statements.

The symptoms of this great disease are so numerous, and their grouping is so various, that one is under the temptation to save himself the trouble of setting off special symptom groups, if only they have something of the migrainoid character, by simply classifying them as varieties of migraine, just as the suburbs of a great city easily get to be called by the name of their centre. If one looks at the matter more closely, however, and especially if one happens to be particularly

interested in the clinical study of a special symptom, it becomes evident that a good deal of reclassification is often both possible and profitable, and that, after all, the symptoms which go to make up migraine are not, like the parts of a machine, without an identity of their own, but are to be compared rather to the individuals who compose a shifting crowd yet remain liable to enter into new relations.

Looking at the matter from this point of view, I wish to call your attention to the migrainoid characteristics of certain forms of the trigeminal neuralgias, especially the intermittent supra-orbital or ophthalmic neuralgia, and, at the same time, to the fact that, after all, these affections are not identical with migraine.

The intermittent supra-orbital neuralgia is an exceedingly interesting affection, and one which has been described by various writers, and under different names, but it does not receive in text-book literature the attention that it deserves. One reason for this is that which I have already indicated, namely, that some of the cases have been merged in migraine, and we may infer that Mœbius would justify this view, both from the general trend of his remarks and from his reference to the importance of frontal sinus and nasal catarrh as an occasional cause of migraine. Other cases, again, have been merged in malaria, which some of the older writers considered as the essential cause of the outbreaks. As a matter of fact, however, the malarial influence, in this country at least, is of but little account.

The intermittent or migrainoid form of supra-orbital neuralgia is to be sharply distinguished from other forms of neuralgia having the same seat, and if we could determine the reasons for this difference we should be making a long step toward a better understanding of migraine. Thus, one sometimes sees a typical neuralgic tic of the supra-orbital area, like that so common for the lower branches of the fifth, and forms of supra-orbital neuritis associated with serious trophic disorders, which are highly interesting and place in a stronger light the importance of the functions of the fifth nerve. Of these affections I cannot now speak in detail. It is, however, noteworthy that analogous differences exist between the types under which the painful affections of other areas of the body occur. To a great extent these differences are determined by the presence or absence of peripheral causes of irritation on the one hand, and of central tendencies on the other hand. And "central tendencies" mean structural peculiarities of the central nervous system, generally of hereditary or developmental origin, and having a physiological meaning. The more strongly marked is the tendency to periodical recurrence of any sort of nervous outbreak, even though the outbreak would not occur at all without some slight peripheral cause, the greater is the reason to suspect that central influences are at work, and to look for other signs of nervous instability.

It is probable that all the periodical neuralgias, and also the visceralgias, are, like true migraine, to which they are often so nearly related, signs of what, for the purposes of scientific classification, may be called a degeneracy of the nervous system.

The literature of the intermittent supra-orbital neuralgia is not very extensive, but contains some important contributions. A Paris graduation thesis by Dr. Ernst Faucheron,<sup>4</sup> published in 1880, gives a reference

<sup>1</sup> Read before the Association of American Physicians, May, 1886.<sup>2</sup> La Migraine, Paris, 1887, pp. 94 and 97.<sup>3</sup> Compare Mœbius: Nothnagel's Specielle Pathologie. Migraine, p. 70.<sup>4</sup> De la nevralgie sus-orbitaire considérée dans ses rapports avec l'œil, Paris, 1880.

to a Latin dissertation on the subject by a Daniel Ludwig, written as early as 1672, and others by Van Swieten and by Morton, about the middle of the seventeenth century. The earliest reference given in the *Index Catalogue* of the Army Medical Library is to a paper by a French writer—Rennes,<sup>5</sup> of Bergerau—who describes a sort of epidemic of this malady, due, as he thinks, to malaria. He had seen thirty-two cases in a little over one year, and all in private practice. A careful analysis would probably show that this collection could profitably be subdivided; but Bertherand,<sup>6</sup> a French army surgeon, also saw, in 1847, a group of eleven cases within one month, at a village in Northern Africa.

Dr. James Jackson, in his "Letters to a Young Physician," published in 1855, gives an account of this interesting form of neuralgia, which, though short, bears the stamp of clearness which characterizes all his work. He calls the disease intermittent hemicrania; and though he distinguishes it from migraine, he points out that the pain may involve not only the supra-orbital area but also the temple, and even, though exceptionally, the back of the head. Dr. Jackson was one of the first to note that these attacks are usually provoked by nasal catarrh, and are often curable by quinine or arsenic in large doses.

Another graduation thesis, this time from the University of Giessen, by Theodor Welcker, published in 1869, gives an excellent account of the whole subject, and an analysis of twenty-five cases, most of which are cited from other writers. He, also, rejects malaria as the principal cause, and invokes instead acute catarrh of the air-passages, but without analyzing this factor at any length.

Mendach,<sup>7</sup> an ophthalmologist of Zurich, writing in 1879, reports that eighty-two cases had been treated in twenty years at the Canton Hospital, though the region was free from malaria. He was the first, I think, to study with care the interesting seasonal relationships of the affection, and gives a plotted curve which indicates that the frequency of outbreaks begins to increase rapidly in the latter part of autumn, reaches its culmination in February, and then declines. The winter season is, he says, the period of maximal catarrhal tendency likewise, and therein lies the explanation. The question will be referred to again later.

Of the later writers, I would refer especially to Eulenberg,<sup>8</sup> Anstie,<sup>9</sup> Seeligmüller<sup>10</sup> and Gowers,<sup>11</sup> but without attempting to make the list exhaustive. The impulse given to the study of neuroses of naso-pharyngeal origin, especially by Hack,<sup>12</sup> about fifteen years ago, also had important results, though it is probable that Hack went much too far in ascribing such importance, as a cause of reflex symptoms, to simple swelling of the nasal mucous membrane. At any rate, Hartmann,<sup>13</sup> of Berlin, probably came nearer the true etiology of this particular form of neuralgia in referring it to irritation in the frontal sinus, which he thinks is due to diminished air-pressure arising from occlusion of the nasal duct by secretion or swelling and subsequent air-absorption, such as occurs in the case of the middle ear. This cause and the possibility, which

Hartmann claims to exist, of giving relief by inflations, are at least worth bearing in mind. Hack reports an interesting case which reinforces the view that even where the local cause is predominant, hereditary tendencies are often found lurking in the background. The patient was of strongly neuropathic temperament, and had at times vibrating (migrainoid) scotomata. The pain also had a slight tendency to shift sides. Yet if, in these respects, the case approached the migraine type, in others it was distinctly neuralgic, and the pain was markedly increased both by pressure on the nerve-trunk and by superficial contacts with the skin.

As regards the frequency of these cases in this neighborhood, the records of the Massachusetts General Hospital show an aggregate of about a dozen cases during the past year, the majority of the patients having presented themselves during the spring months.

A comparison of my experience with that of the authors cited, and others not referred to, justifies the following clinical sketch of the disease.

The attack is apt to be ushered in by a dull feeling in the whole forehead; or by some form of paresthesia in the frontal area of the affected side; or by a localized sense of heavy pressure at the nerve exit under the eyebrow; or by an enlargement of the pupil, letting in more light than usual to the affected eye; or by a feeling of dryness in one nostril.

Even the day before the outbreak, or perhaps several days before, some warning may be felt, such as a general sense of depression, with dull head. In one case, to be referred to later, the face of the opposite side and both limbs feel prickly or numb or heavy; but this case ought perhaps to be classed as migraine. Frequently, the patient feels well throughout the attack except for the pain. When the attack is at its height the pain is liable to be distributed over the whole frontal nerve area, the eye and the side of the nose, and the kinship of the affection of migraine is shown by the fact that painful areas may be found in the temple, near the vertex, and even at the back of the head.

Occasionally the lower branches of the fifth or the forehead of the opposite side are involved.

The eye becomes reddened and weeps; the pupil is generally dilated, but is sometimes contracted; the lid droops; the muscles of accommodation and even the external muscles of the eye may become paretic; and signs of flushing occur.

In light attacks the pain may be definitely localized in one spot—the eyeball, the eyebrow, the forehead. In character the pain is boring, deep-seated or painfully pulsating. Tinnitus aurium, sweating of the skin, and other nervous symptoms may complicate the attacks. If the pain is severe vomiting comes on.

In the thesis of Welcker a case is recorded where the vision on the affected side was greatly obscured, and "glimmer" scotomata seem to have been present in a few cases. Here, again, we touch on the realm of migraine; but all that I claim is that sharp division lines could only be arbitrarily drawn.

As a final outcome of repeated attacks, the eye may remain permanently more liable to fatigue, the arterioles of the affected frontal area may perhaps become more or less thickened (Thoma), and signs of impaired nutrition of the skin and periosteum may appear. Here we touch hands with the cases where neuritis is the chief lesion. I know of three typical cases where

<sup>5</sup> Arch. Gén. de Méd., 1836, 156.

<sup>6</sup> Cited by Faucheron.

<sup>7</sup> Correspondenzblatt für Schweizer Aerzte, 1876, ix, 640.

<sup>8</sup> Nervenkrankheiten.

<sup>9</sup> Neuralgia and its Counterparts.

<sup>10</sup> Krankheiten der Peripheren Nerven.

<sup>11</sup> Diseases of the Nervous System.

<sup>12</sup> Wiener med. Woch., 1882, 51.

<sup>13</sup> Berl. klin. Woch., 1882, 732.

slight thickening occurred over the eyebrow, apparently involving the periosteum, and in one of these, long after any attack had been present, small but tender papules used to crop out, scattered in small numbers in the eyebrow or on the forehead.

The pain is, as a rule, regularly intermittent, the recurrences taking place usually in the morning at eight or nine o'clock, less often in the afternoon, and only occasionally in the evening. Sometimes, and that especially in seizures of long duration, there are two recurrences in one day, the second being always the lighter; and, as in the case of migraine, the type of recurrence may change in the course of years. Very rarely, instead of a distinct intermittence, only a remittance of the symptoms occurs. The attacks occur in groups, spread over one to several weeks, or even very much longer periods, provided the local (catarrhal) irritation persists, or the nutrition of the nerve is impaired, or the neuralgic habit is formed. The outbreaks generally recur daily. It is said that in some cases there are regular intervals of two or three days, but this I have never seen. The frequency with which the groups of daily attacks recur is partly, but not wholly, dependent upon the frequency of recurrence of special causes. The observations of Mendach have already been quoted, according to which by far the greater number of attacks occur, at Zurich, in the winter, and this pretty nearly reflects my own experience, though I have known them to occur in the late spring and in the fine weather of summer. Another writer has observed cases showing regular recurrences every spring and autumn for a series of years. One patient, a physician, whom I have examined, but of whose case I have, unfortunately, no notes, had had regular attacks of this sort for some twenty years, and had been driven by them to desperation. Another patient, otherwise a strong, healthy man, had had an attack every year for four years, and always in March, except last year, when it occurred in August. It is doubtless true, as Mendach says, that this tendency is partly controlled by the fact that catarrhs are more common in winter, but it is also certain that the habit of cyclical recurrence makes the nervous system more susceptible at certain periods. It is generally possible to trace the actual outbreak to catarrh of the frontal sinus, but, sometimes, even with persons whose attacks are usually brought on in this way, an outbreak occurs for which special causes are sought in vain. It is even conceivable that the cold and damp weather, when it does cause coryza, effects this result by acting first on the predisposed segment of the nervous system, and through that on the nasal mucous membrane, the vitality of which has been lowered. It is certain that it is not every attack of catarrh that ends in neuralgia, even with a predisposed person. As has been said, it seems to be the catarrh of the sinus which is specially related to these seizures, and consequently they usually occur, as might be expected, rather late in the course of an ordinary cold in the head, unless where, as in a violent epidemic influenza, the whole nasal tract lights up at once in inflammation. Sometimes the catarrh, involving the frontal, sphenoidal or ethmoid sinus, or the antrum, becomes chronic, and in such cases the neuralgia also may persist in full violence. I watched for some time a case of this sort that Dr. R. H. Fitz was kind enough to refer to me.

The patient was a man of good general health, a farmer, married, and thirty-nine years old. Toward

the end of September, 1894, he had a catarrhal attack, attended with great prostration. After this had continued for about a week he began to suffer from diffuse frontal pain such as frequently accompanies the extension of inflammation into the frontal sinus, but in an unusually severe form. For two weeks he remained in the house, suffering night and day. As he grew better the pain changed its character and seat. At first it diminished in intensity toward nightfall and began to be limited to the left side of the forehead; then it ceased altogether for the night; and very soon the attacks began to assume the type which they continued to show for a number of months afterward—that is, with a recurrence of pain at eight or nine each morning and a duration of six to eight hours.

This case is interesting from several other points of view. In the first place, the patient himself used to have "sick headaches" frequently when younger, and still continues to have them to some extent, usually about once a month. His mother was also a sufferer from migraine. I shall adduce other cases, later, to show that a tendency of this sort is almost always to be found in the personal or family history of patients with this intermittent form of neuralgia. It is also interesting to note that the purulent secretion was very profuse on the affected side during the attacks of the pain, and began to grow less when the pain abated, disappearing almost wholly toward night. I have recently seen another case where, by the account of the patient, the secretion was never noticeable except during the attacks of the pain, so much so that he at first denied that he had any catarrh at all. His final statement that he had an occasional discharge of thick mucus during the attacks, and on the affected side alone, was verified by an examination made at the hospital. I do not think, however, that the pain necessarily disappears when the local inflammation ceases, and Dr. Algernon Coolidge, who kindly examined and treated for me the patient whose case I have related above, is of the same opinion. Hartmann<sup>1</sup> has reported an interesting case with severe catarrhal symptoms closely like those which I have just described.

(To be continued.)

## THE PREVALENCE AND FATALITY OF PNEUMONIA.<sup>1</sup>

BY CHARLES F. FOLSOM, M.D.

In 1842 the State of Massachusetts commenced the registration and record of vital statistics, following almost immediately the example of England.

Allowing ten years for completing details and methods, and for physicians and officials to become familiar with their duties, we have from 1852 more than forty years' reports of deaths and their causes for analysis and comparison.

During that period of time the records indicate a slight increase in the total death-rate, a marked increase in the mortality from cancer, bronchitis and diseases of the heart, kidneys and brain; an excessively increased mortality from pneumonia; an increase from diphtheria, including, of course, croup, with three severe epidemics.

<sup>1</sup> Read by title at the meeting of the Association of American Physicians, Washington, May 1, 1896.

<sup>2</sup> Berlin. klin. Woch., 1882, 731.



The decrease in the death-rate from pulmonary consumption and from the group of infectious diseases as a whole (diarrheal diseases, typhoid fever, cholera, whooping-cough, diphtheria and croup, measles, scarlet fever, and small-pox), is very great, and it is to be expected that the decrease in diphtheria which has begun will continue.

In a word, the lessened prevalence of the so-called preventable diseases is very gratifying. The increase in the total death-rate, in spite of a diminished birth-rate, and in the mortality from the diseases designated as local and constitutional, indicates that some potent causes of sickness and death are more than sufficient to counterbalance the great activity in measures to promote the health of the people which have become general throughout the State.

The population of Massachusetts has increased from a little over a million (1,047,520) in 1852 to two million and a half (2,500,183) in 1895. Over a million immigrants have arrived in New York and Boston in that time whose destination was given as Massachusetts, and many thousand French Canadians swarm to and from our crowded mill towns during periods of business activity or depression. The deterioration in the average character of the population of the State is felt otherwise than in our mortality returns, and from its aggregation in cities and towns, with their less healthful occupations than those of the country, an explanation is offered of the increased fatality from diseases, the prevention of which is to so great an extent a matter of individual intelligence and care. The fact that the preventable diseases have become less prevalent under such conditions is sufficient evidence of the usefulness of our boards of health.

These facts and figures are most tempting for minute analysis and comparison; but, however interesting such a study might be, it is not to our present purpose.

In reply to the natural question, how far these statistics are exact, it can only be said that investigation shows that there are many sources of error which cannot be corrected without more attention to the matter than is at present given to it in this country. At the same time, the defects are far less in Massachusetts than in the national reports and probably less than in any other of the States. No other of our States has such full statistics for so many years. It is reasonable to suppose that part of the reduction in the annual death-rate per 10,000 living reported from consumption, for instance, from 41.1 for the five years 1851-55 to 23.6 for the years 1891-1893 is due to more accurate diagnosis and more careful registration, while the percentage of unknown or unreported causes of death has diminished nearly two-thirds.

One would expect the fewest mistakes in those diseases the symptoms of which are the plainest. I am satisfied that in the reported deaths from typhoid fever and pneumonia, for instance, the figures are very nearly correct for recent years and sufficiently so for comparison earlier. General tuberculosis and appendicitis are likely to be mistaken for typhoid fever, but not in cases enough to materially affect the percentages, and the clinical picture of pneumonia is quite clear. A comparison of pneumonia with typhoid fever shows such striking results that I have placed their death-curves side by side in chart form. In 1852, pneumonia was the less fatal of the two diseases; in 1856 their lines cross in the diagram, and in the last few years the average death-rate from pneumonia has

been more than five times as great as that from typhoid fever, even after excluding the effect of the recent epidemic of influenza.

What is the inference to be drawn from this extraordinary picture? One's first thought is that typhoid fever is the type of an infectious disease the source of which was early discovered, and the means of controlling which were easy to apply. The course of pneumonia, on the other hand, suggests to the imagination the progress of an infectious disease which had been allowed to run rampant without any efforts to control it. But is this the whole truth or indeed a considerable part of it?

The diplococcus is one of the most pervasive, virulent and unmanageable of the microbes. Since the reports of the infectious character of pneumonia in the Dublin Fever Hospital more than twenty years ago, frequent statements have appeared in the medical journals attesting to its infectiousness, and the source of infection in particular cases is by no means infrequently thought about and commented upon.

I have had a mass of statistics prepared and tabulated with reference to ascertaining the conditions which govern the prevalence of pneumonia, but they prove very little that is definite and that is of value in this inquiry, so that I will not detain you with them. Harsh climates, unfavorable physical states, general ill health, alcoholism, bad personal habits and foul air are found by common observation to be its frequent forerunners, and the adage is that pneumonia is the friend of the aged.

Unlike typhoid fever which is most prevalent at the ages when the powers of resistance to disease are good, pneumonia seeks out those whose resisting power, by age or otherwise, is weak or enfeebled. But it can hardly be that so great an increase in the mortality from pneumonia can be wholly due to a lowered general standard of vitality and habits in the community, although the increase that has taken place in many of the chronic diseases might be fully explained in that way and through more accurate diagnosis and better, although still imperfect, registration.

In England, as I have shown by the second chart, there is a slightly diminished death-rate from pneumonia, if we exclude the effects of the recent influenza epidemic. In that country, as is well known, social and sanitary progress have gone hand in hand; the prison population and pauperism, as well as the death-rates, have diminished, and the general condition of the people has improved.

In Glasgow, the death-rate from pneumonia since 1862 bears a striking resemblance to that of Massachusetts. The sanitary regulations of the city and especially its control over infectious diseases, under Dr. Russell's able guidance, are probably the best in the world except for its smoke-nuisance and its filth-laden atmosphere from the sewage-polluted Clyde, while its climate and fogs are even worse than ours. But even there an enormous reduction in the total death-rate has taken place as well as from the preventable diseases.

It is impossible, with the facts now at command, to say how far conditions beyond sanitary control are responsible for the excessive prevalence of pneumonia, or to what extent it is manageable as an infectious disease, if at all. But the infectious character of diphtheria was not generally admitted twenty years



<sup>1</sup> Thèse, Paris, 1882, 1883.

|supplying information on this point, I have followed

few years the average death-rate from pneumonia has | diphtheria was not generally admitted twenty years

ago, or of influenza ten years ago. It is my very strong belief that boards of health should require notification of pneumonia to them as an infectious disease and that after it the sick-room should be disinfected as thoroughly as in diphtheria. I hope that this Association will feel disposed to vote to advise boards of health in accordance with that belief.

If it should be said that the prevalence of pneumonia follows too closely certain seasons of the year for an infectious disease, a glance at my third chart, from Dr. Abbott's statistics, shows that its cause is not very unlike those of scarlet fever and diphtheria.

As regards the treatment of pneumonia, is not the medical profession in the habit still of relying too much on medicines? That certainly seems to me a fair inference from the last paper and discussion on that subject before this Association, two years ago. I find in the papers, in medical journals and in the reports of discussions in medical societies an increasing tendency, from year to year, to trust to hydrotherapeutics in the treatment of pneumonia and to depend less upon drugs. Personally, I have used cold sponge baths and occasionally applications of ice for the last three years in my hospital wards in every case of pneumonia except those absolutely *in extremis*. As the months of my service are before the time of greatest prevalence of pneumonia, my cases are not yet enough for tabulation and generalization. I am satisfied that life may be often saved by that means, and I am sure that thereby delirium is quieted, pain is relieved, cough is eased and sleep is produced without the necessity of resorting to drugs. That the tonic effect of cold sponge baths is fully as great in pneumonia as in typhoid fever is fully borne out by my experience, and I have never seen any ill effects from them. The greatest number of baths that I have used in a single case has been twenty-five, and every patient without exception has expressed a feeling of comfort from them and of liking them, unlike my typhoid fever patients, a large proportion of whom object to their cold sponge baths.

#### FIVE CASES OF RUPTURE OF THE URETHRA TREATED BY EXTERNAL URETHROTOMY AND SUTURE.

BY A. T. CABOT, A.M., M.D.,  
Surgeon to the Massachusetts General Hospital.

THE intractable nature of traumatic stricture of the urethra is so well known that no apology is required for a report of some cases in which an attempt was made, by immediate suture of the ruptured urethra, to furnish accurate coaptation of the divided ends of the canal and by promoting rapid and smooth healing of the mucous membrane, to avoid the formation of a stricture.

French surgeons have interested themselves much in this class of injuries. According to Salviat,<sup>1</sup> their practice up to 1858 was to treat these cases by simple perineal incision. From that time till 1875 it became more and more the practice to search for the posterior part of the urethra by an early perineal section with the object of introducing and fastening in a catheter (*sonde à demeure*).

Some difference of opinion still existed, however,

among the best men during the decade commencing in 1880 as to whether it was well to introduce the catheter at once or whether it was better to simply establish perineal drainage by the early operation, and some days later, after the swelling had gone down, to search for the posterior urethra and place the *sonde à demeure* in position.

The attempt to temporize led to the frequent resort to aspiration of the bladder for the purpose of relieving its tension until the urethra was able to resume its functions or until the formation of a perineal abscess or a urinary infiltration compelled a resort to more radical measures.

During this decade the tendency towards an immediate suture of the urethra began to show itself, and the very thorough and convincing experimental work of Dr. Kaufmann, of Zurich, showing that an immediate suture greatly lessened the extent of the cicatrix in the urethral wall, gave an impetus to a further trial of this method, even in the face of considerable opposition from some good authorities. Since that time a number of cases have been reported in which the immediate suture of the canal has been followed by the best results in the way of quick and safe healing.

The effect of urine leakage in favoring the formation of indurated, contracting fibrous tissue, and the part it consequently plays in stricture of the urethra, has been pointed out by Mr. Reginald Harrison and constantly urged by Dr. J. P. Bryson of St. Louis. A ruptured urethra offers the best possible conditions for the formation of tough fibrous tissue under the constant irritation of the urine.

No one who has cut down upon a ruptured urethra and found the partially or completely separated ends of the canal lying in a ragged cavity filled with a blood-clot; and then, after the application of stitches, has seen the integrity of the urethra restored so that a catheter passes smoothly by the point of union into the bladder without a hitch, can doubt that by the operation the amount of cicatricial tissue will be greatly lessened and the chance of a troublesome stricture by so much reduced.

If the urine can be kept from coming in contact with this closely joined wound for a few days, it will give time for such adhesion as to practically seal the tissues against subsequent urine leakage. When this can be successfully accomplished, it seems rational to hope that the cicatrix will be a thin and supple one and will not lead to troublesome stricture formation.

Hitherto, the formation of a stricture has been regarded as the inevitable consequence of a urethral rupture; and while in the fortunate cases of moderate severity, the regular passage of a sound may keep the urethra permeable, a neglect of this precaution may be expected to result in a rapid closure of the stricture. In other cases of greater severity the stricture shows a constant tendency to contract in spite of every effort to keep it open, and repeated operations are required to avert the serious consequences of a complete closure.

In the cases of sutured urethra that I have found reported up to this time, the patients have been kept under observation for too short a time to enable us to get any idea as to the final result in a matter of stricture formation.

That I might contribute as far as possible towards supplying information on this point, I have followed

<sup>1</sup> Thèse, Paris, 1882, 1883.

my cases by every possible clue, and have succeeded in finding and examining three of them at periods from four and a half to two and a half years after the operation. I shall be greatly obliged for information as to either of the others that may have come under the observation of other practitioners.

**CASE I.** J. C., aged eighteen, fell astride of a barrel twenty-six hours before entrance to the hospital, August 28, 1891. Urination was impossible, and an attempt to pass a catheter had failed.

Under ether a perineal section was immediately done. The bulbous portion of the urethra was so crushed as to be divided across two-thirds of its extent, so that only a narrow strip of the roof of the canal remained intact. This rent in the urethra was closed by four catgut stitches so taken as to include the muscular and cavernous tissue surrounding the urethra but not encroaching upon the mucous membrane. When these were tied the canal was so restored that a catheter slipped in with perfect ease. It was fastened in place and the outer part of the wound was left open so that in case of any leakage the urine should not be shut up within the tissues. Recovery was uneventful. The catheter was removed upon the tenth day and the patient left the hospital well at the end of twenty days.

For two years this patient had intermittent treatment with sounds and bougies, in accordance with advice given him at the hospital. A No. 27 French bougie was the largest size passed in this time.

He was seen and examined on March 10, 1896, when he told me that he had not had an instrument passed for three years. The urine was clear and passed in a good stream. Sounds Nos. 26 and 28, French, passed without resistance and caused no bleeding.

**CASE II.** P., aged twenty-three, entered the Massachusetts General Hospital, October 17, 1891. Twenty-four hours before entrance he had fallen astride a pail which caused a sharp hemorrhage from the urethra. He was unable to pass water, and his physician could not enter a catheter.

Operation was done immediately upon entrance. While being etherized there was a sharp hemorrhage from the urethra, which was restrained by pressure in the perineum. The perineum was occupied by a large clot of blood. Upon cutting into this and turning it out, the two ends of the urethra, completely separated, were found in the cavity. The ends of the canal were joined by six catgut stitches, and upon tying these the hemorrhage, which had been persistent and troublesome, was entirely stopped. A catheter slipped in easily and was left in place.

The patient proved unruly, and on several occasions removed the catheter. Presently a small abscess formed in the perineum which required opening. After this all went well; and he was discharged November 11th, thirty-one days after operation.

**CASE III.** J. J. G., aged thirty-one, entered the hospital July 2, 1892. He had fallen astride a joist forty-three hours before entrance. This was followed by hemorrhage from the urethra and the formation of a large hematoma in the perineum, and the patient was unable to pass water nor could a catheter be introduced.

At the time of entrance the bladder reached to the umbilicus. The distention of the bladder was relieved by aspiration, and as soon as arrangements

could be made operation was done. Upon cutting into the perineum by the median line, a blood-clot about the size of an orange was found and turned out. In this case there was complete separation of the urethra and there was some difficulty in finding the proximal end, but when it was found the two portions of the urethra were easily united by catgut stitches and a catheter put in place. The patient made a good recovery, and went home twenty-three days after the operation.

**CASE IV.** J. D. P., aged twenty-one, entered the hospital June 29, 1893. In jumping off a bicycle he had struck the perineum on the rear wheel with so much force as to break the wheel. This caused ecchymosis in the perineum, hemorrhage from the urethra and inability to pass water. A large silver catheter was passed by his attendant under ether, and the bladder washed with boracic acid.

The following day swelling and pain in the perineum had increased, and he had a chill. He was operated upon by an incision in the median line, and the clotted blood lying about the urethra was turned out. The rupture was found extending transversely across the bulb, completely separating the two parts. The ends of the urethra were united by catgut stitches; and these at once stopped the hemorrhage, which had been troublesome. The patient for a few days was pretty sick, with a tendency to a suppression of urine; but after this was over, he rapidly recovered. The catheter was out on the eleventh day, and he went home with the wound wholly healed on the nineteenth day.

In answer to a letter, this patient reported in February, 1893. He had never had any trouble in urination and the water was perfectly clear. On examination by sounds the large sizes were arrested at the seat of the rupture. After a No. 22 French sound had been passed through the stricture, it easily yielded up to a No. 25, French. One week later a No. 26, French, was readily passed without any exercise of force, and later, still larger sizes were used.

**CASE V.** C. F. M., aged twenty-two, entered the hospital October 21, 1893. He had fallen astride a chair five days previous to entrance, since which time he had been constantly troubled with hemorrhage from the urethra, especially at the time of urination, with a tendency to swelling in the perineum.

A perineal section was done. Clots lying about the urethra were turned out, and it was found that the lower part of the urethra was torn across, the roof of the canal being the only part intact. The ends were joined by catgut stitches, and a catheter was introduced and left in place. The catheter was removed on the tenth day, and the wound was entirely closed on the twentieth day.

The patient returned for a time to the out-patient department for the passage of sounds. One month after his discharge from the hospital an instrument of No. 30 French calibre passed easily. This patient was seen again February 11, 1896. At this time a No. 30 French sound passed with ease through the whole canal, although he had had nothing passed since 1893.

In all of these cases the immediate result was good. In three of them the opportunity was given for an examination some years after any dilating instruments had been used. In Cases I and V no stricture was found, and instruments as large or larger than any

used after the operation slipped past the point of rupture with perfect ease.

In Case IV, while no interference with urination was noticed, a narrowing of the urethra was found. This narrow point was, however, not a hard cicatricial stricture, but was so soft and yielding that without the least exercise of force it was rapidly dilated to a good size.

These results would certainly encourage a continuation of attempt to promote immediate union of the urethra when divided by violence.

The operation is not a difficult one. A median incision opens the blood cavity about the urethra. After the clots have been turned out, a sound passed down the urethra quickly shows us the anterior end. If the urethra is not fully divided across, the rent is then easily seen and rapidly repaired. When the division has been complete, the posterior end may not be so easily found, but in a fresh rupture the profuse bleeding which occurs from the bulb of the urethra, instead of obscuring our search, serves as a guide to that which we are seeking. If then, the bleeding point in the posterior part of the wound is seized with forceps and pulled forward, the collapsed and retracted end of the urethra will be brought to view. In a case of longer standing, when the bleeding has stopped the search may be more difficult, in which event firm pressure should be made above the pubes to force the escape of urine to serve as a guide.

In all of these cases the suture was made with interrupted catgut stitches, which were all placed before any of them were tied. Care was taken to include only the cavernous and muscular tissue in the stitches and not to encroach on the mucous membrane. In every case, upon tying the stitches, the hemorrhage immediately stopped.

#### CONCLUSIONS.

(1) In cases of ruptured urethra, immediate perineal section with suture of the urethra should be practised.

(2) By this procedure not only do we greatly lessen the danger of urinary infiltration and abscess, but we also, in a large proportion of cases, may hope to prevent the formation of close intractable strictures.

(3) In an early operation the search for the posterior end of the urethra is much easier than it is later. The hemorrhage from the branches of the artery of the bulb serves as a guide to that end of the canal.

### Clinical Department.

#### CARCINOMA OF RIGHT KIDNEY.

BY F. W. JOHNSON, M.D.

KATE W., white, fifty-five years of age, married, entered the Carney Hospital, November, 1895. Her father died of old age. Her mother died of "a tumor in the side." Dr. Malcolm Storer saw her in the out-patient department and made a diagnosis of tumor, probably of the right kidney. From her appearance, and from the history of the case he considered the growth malignant.

For some eighteen months previous to entering the hospital she had had sharp pains in the right side, and frequently had passed bloody urine. For over a year

she had noticed a lump in the right side which, she thought, had steadily been increasing in size. Often the pain extended down the right thigh. Night-sweats, nausea and vomiting had been present.

The pain in the side was constant, requiring morphine for its relief. She was much emaciated, the skin was of a yellowish, muddy color, and the conjunctivæ were yellow.

The urine was pale, acid, and contained a large trace of albumin. The quantity in twenty-four hours was fifteen ounces. The sediment contained a considerable number of blood and pus corpuscles, single and in clumps. Renal cells with oil drops adherent, and hyaline and finely granular casts were present.

On palpation a freely movable, non-sensitive tumor, which caused a marked bulging of the anterior abdominal wall, could be felt in the right side over the region of the kidney. It was so movable, both without and with ether, that a tumor, with a long pedicle, starting from the pelvis was thought of, and not excluded until after the abdomen had been opened.

November 9th an incision, parallel to the median line and six inches in length, was made over the tumor. The part first reached was sub-peritoneal, but it was soon found that the disease had passed through the posterior parietal peritoneum and had involved the intestine, mesentery and omentum. The mass brought to view was about the size of a child's head.

Further examination showed the mass to be connected with the right kidney. This was freed from its adhesions, and the renal artery, vein and ureter were tied separately and divided.

On delivering the growth it was found to have involved the colon, which was firmly attached to it. The attachments were divided and the tumor removed. A piece of the omentum as large as half of my hand was infiltrated with the growth and was removed.

The intestine about the tumor appeared everywhere infiltrated with carcinoma for a distance of from five to six inches. For a distance of eight inches along the intestine the mesentery was divided and a V-shaped piece as large as my hand was removed. Eight inches of the intestine, going well beyond where the disease was visible, were resected, an end-to-end anastomosis being done. The cut edges of the mesentery were brought together with an over-and-over suture of fine silk, and were attached to the under surface of the intestine at the point of anastomosis. The intestine at the place of operation was carefully wrapped in the omentum and then tucked in on all sides with Peake & Buzzell's iodoform gauze.

On the day following the operation little urine was passed, and there was considerable nausea and vomiting.

On the second day the amount of urine increased, with a corresponding improvement in the patient's condition.

On the fourth day part, and on the sixth day, the remainder, of the gauze was removed. No fecal fistula occurred, and union took place by first intention except where the gauze was placed.

On the fifth day the bowels were moved by calomel. On December 8th the patient was discharged. She had been free from all pain for some ten days, had gained in weight, and was passing from 30 to 40 ounces of urine in twenty-four hours.

In answer to a letter, sent by my assistant at the

hospital, she wrote, February 26, 1896, that she was suffering considerable pain in the right side, that the bowels pained and troubled her a great deal, and that she could not get strong. She had not been out of the house since getting home from the hospital.

Dr. W. F. Whitney's report :

The tumor of the kidney received Saturday shows a large, somewhat lobulated mass, the size of the fist, occupying one end of the organ which is replaced by it.

The capsule of the kidney is directly continuous over the growth. On section it is found to be partly fibrous and partly soft, with areas of softer, opaque, whitish and slightly hemorrhagic substance in the midst of the fibrous tissue. It is quite sharply differentiated from the rest of the kidney substance, which presents but little structural change.

Microscopic examination shows it to be made up of solid masses of small epithelial cells which had rapidly undergone a fatty degeneration.

Diagnosis, cancer; but its origin and finer histological details will require time to be worked out. The intestine removed presented no changes beyond those due to the invasion of the disease into the peritoneal coat.

## Medical Progress.

### RECENT PROGRESS IN OBSTETRICS.

BY CHARLES W. TOWNSEND, M.D.

#### ECLAMPSIA.

E. HASTING TWEEDY<sup>1</sup> believes that, with the exception of the removal of sepsis as a cause of death, the present statistics of eclampsia bear very unfavorable comparison with those of former years, and he thinks that the proofs are convincing that we are not at present moving along rational paths.

Chloroform, chloral and bromide of potassium act as powerful depressing agents to the heart and tend to kill in precisely a similar manner to that of the eclamptic poison. Furthermore, the anesthetic is generally applied during a convulsion only, with but slight effect in lessening the severity of the attack; and by limiting the amount of oxygen passing into the lungs, it in some cases actually increases the severity of the fits. Pilocarpine, he believes, is a most fatal drug for uremic patients, because of its action on the heart, and in promoting free salivation and bronchial secretion. He does not believe that severe sweating is a justifiable proceeding, and hopes soon to see it more generally condemned.

In the uremic coma, fluids which form in the mouth and are increased by the use of pilocarpine and anesthetics, as well as the drugs that are given, find their way more easily into the lungs than the stomach. This tendency is increased by the fact that the patient is generally left lying on the back, and also by the gag which prevents swallowing.

The treatment by immediate delivery in eclampsia, Tweedy considers unsound in theory and disastrous in practice, and one of the most serious complications of eclampsia is the onset of labor. Induction of labor and forced delivery by exposing the patient to the air, by reflex stimulation, by abdominal palpation, and above all by dilatation of the cervix are all prone to aggravate the eclampsia. In proof of this he presents

the statistics of Dr. Green from the Boston Lying-in Hospital, from which Dr. Green had drawn an opposite conclusion.

At the Rotunda Hospital for the last three years the treatment has been hypodermic injections of morphine, beginning with one-half a grain, and followed every two hours by one-fourth of a grain, until either the symptoms are alleviated, or until two grains have been given in twenty-four hours. If, in spite of this, labor sets in, forceps are applied as soon as the os will safely admit their application.

The best authorities, he states, agree in believing that opium has but little action on either the heart or kidneys. Brunton states that the secretion from the kidneys is at times increased by its employment. It is a drug which lessens metabolic changes (thus limiting toxin formation), a nervous sedative of the first order, and lastly, one that dries up salivary and bronchial secretions. All practical experience goes to prove it is not dangerous to the fetus in the uterus.

Blood-letting, especially done twice at an interval of two hours, he believes of great value, relieving the kidneys, drying up bronchial and salivary secretions, diminishing venous congestion and removing an absolute amount of toxin from the body. No nourishment should be given during the attack, and any medicine should be administered through a nose-tube, or better still, the rectum.

In conclusion, he urges the necessity of attention to small details.

S. Seabury Jones<sup>2</sup> comes to the following conclusions as regards eclampsia :

That he who saves four out of five women who have been attacked by eclampsia before or during labor may consider that he has been fairly successful.

That we have medicines powerful for good, and that they should be given a fair trial before resorting to *accouchement forcé* in actual convulsions.

That, at a period when the fetus is viable, especially at the end of the eighth month, if the patient suffers from severe premonitory symptoms, such as anasarca, severe and persistent headache, and the eye symptoms, and particularly if the evidences of nephritis have persisted for some time in spite of treatment, premature labor should be induced in the interest of the mother and child.

That in the actual presence of convulsions we should endeavor to overcome them by the use of proper medicines and remedial measures, notably by the use of veratrum viride, morphine, chloral and chloroform, rather than appeal to the rapid emptying of the uterus.

That in veratrum viride we have a remedy powerful for good when properly used, but that of Norwood's tincture it is better not to inject more than five to ten minims for the initial dose, to be followed by doses of five minims at intervals as required to hold the pulse, and that it is well to combine it with morphine.

Zweifel<sup>3</sup> analyzes 129 cases of eclampsia that have occurred in his clinic in Leipzig. Formerly he avoided rapid delivery on the ground that the irritation caused by the manipulations increased the number of paroxysms. In later years he employed rapid delivery under chloroform which he much prefers to ether in these cases, and the comparative results of the two forms of treatment are as follows : Under the

<sup>1</sup> Dublin Journal of Medical Sciences, March, 1896.

<sup>2</sup> Medical Record, April 25, 1896, p. 586.

<sup>3</sup> Centralblatt für Gynäkologie, 1895, Nos. 46, 47, and 48.

expectant method mortality 32 per cent., rapid delivery method 15 per cent.

F. K. Willis<sup>4</sup> reports cases of eclampsia to show the value of *veratrum viride*. He considers the fear of depression following the use of this drug to be entirely unfounded. He believes its beneficial action to be due to its effects on vascular tension and as a diuretic. *Veratrum viride* not only arrests convulsions, but prevents threatening ones. In the latter class, five minims of the fluid extract should be given two or three times daily. In the presence of eclampsia he gives fifteen minims of the fluid extract at once hypodermatically, followed in half an hour by five minims, repeated if necessary. Generally the pulse should be held at 50 or 60 for a day or two.

J. G. Swayne<sup>5</sup> gives the result in 36 cases of eclampsia met with in private practice. In 11 cases with six deaths, the eclampsia came on before any signs of labor were present; 20 with five deaths, occurred during labor, and five without any deaths occurred after delivery. His statistics, as he says, tend to confirm the observations of others, which show that the earlier the convulsions come on before labor, the more unfavorable is the prognosis. He quotes Dr. Barnes as saying, "Venesection is out of date, but I have practised it with the best results." He has bled in many cases of eclampsia, and feels sure that he has saved patients where other remedies have failed, and that, too, without resorting to *accouchement forcé*, which should be considered a *dernier ressort* in these cases where labor is not present. He refers to a case where no other exciting cause for the convulsions other than uremia could be discovered; and that the presence of the fetus *in utero* had little share in bringing them on would seem to be shown by the cessation of the convulsions and of the albuminuria, notwithstanding the presence of the dead child in the uterus for a fortnight afterwards. He attributes the improvement particularly to the bleeding.

#### PUERPERAL FEVER.

William T. Lusk<sup>6</sup> writes on the nature of puerperal fever. The cervical canal of pregnant women is protected from the invasion of vaginal micro-organisms by the mucous plug. In the mucus the germs cannot multiply, and Stroganoff believes it possesses distinct destructive properties. The entire parturient act serves to guard woman against infection. With the rupture of the membranes and descent of the child the vaginal canal is cleansed, and the leucocytosis and increase of vaginal secretion are both inimical to the action of the septic germs. Finally, the toilet of the vagina is completed by the passage of the placenta. Are the disturbing methods of disinfection commendable? The antiseptic douches dissolve the mucus, set free the imprisoned germs, weaken the resistance of the tissues, contribute to the extension of the sources of infection.

The clinical tests of the advantages of substituting careful midwifery for the employment of germicides as a means of prophylaxis have been most satisfactory. That in most cases infection is conveyed by the hands of the attendant is self-evident. In these particulars the obstetrician should take the same minute care as the surgeon.

There are cases in which the safe conduct of labor is hardly possible without internal disinfection. The

latter is admissible, too, in febrile conditions dependent on local causes and in the case of unhealthy discharges.

He quotes König as stating that in 47 of 68 cases where pulse and temperature were normal the uterine lochia were germ-free, while in four cases streptococci, in four gonococci, and in six saprogenic germs were present. Of 179 cases of endometritis due to infection, 75 were the product of streptococcus pyogenes, and only four of the staphylococcus pyogenes aureus. All the fatal cases (6) were caused by streptococci. In 20 of the 75 cases no internal examination had been made. There was the widest difference in symptoms due to streptococcus infection, in some there not even being a rise in the temperature. The earlier the rise of temperature the more severe, as a rule, are the symptoms. The fatal cases most commonly belong to the class in which the streptococcus is introduced into the uterine cavity during labor. If the infection takes place by the vagina and reaches the uterus one or two days after labor, where the uterus is contracted, the vessels are filled with thrombi, and the repair of the endometrium has begun. The symptoms are usually of a mild type.

Infection due to staphylococci is of a mild type. Both streptococci and staphylococci may occupy the uterine cavity simultaneously, but the former usually rapidly drives away the latter. The bacterium coli, of all the infectious germs, appears best able to sustain itself in the presence of the streptococcus.

Krönig reports 50 cases and Burkhardt 21 cases of puerperal endometritis due to gonococci. The disease is usually of a milder type, but runs a protracted course. The putrefaction forms of endometritis (50 cases) Krönig found were mostly anerobic; their influence is confined to the production of ptomaines.

The researches of Bumm show that while doubtless, in most cases of puerperal diphtheritis, the so-called membrane is really a necrosis of tissue due to streptococci, true cases of diphtheria caused by the Löffler bacillus with production of fibrin do occur in puerperal women.

How far the douche is beneficial in fevers due to the gonococcus is not yet decided. A single douche is not likely to work any prolonged good, and repeated douching is in all cases deleterious. Of great importance in considering the question is the fact that the process is generally benign and is localized by pelvic peritonitis. When the organs are fixed by adhesive inflammations douching is harmful.

In the form due to streptococci great caution must be exercised. When the malady has gained full headway neither curette nor douche is of avail. At an early stage the germ has already penetrated the underlying tissues. The curette, it has been argued, should therefore be employed to scrape away the entire decidua. As a rule, the curette thus employed destroys the barrier formed by the leucocytes and opens the door to the enemy. Mild cases are frequently converted by this process into virulent ones. If douches are employed they should not be repeated. Iodoform bougies introduced into the uterine cavity are best for this purpose.

#### THE PREVENTION OF PUERPERAL FEVER IN PRIVATE PRACTICE.

G. Ernest Herman<sup>7</sup> presented a paper on this sub-

<sup>4</sup> Medical News, March 28, 1896.

<sup>5</sup> British Medical Journal, February 29, 1896, p. 523.

<sup>6</sup> American Journal of Obstetrics, March, 1896, p. 337.

<sup>7</sup> British Medical Journal, January 11, 1896.



ject at the annual meeting of the British Medical Association. He says there are three possible bearers of infection: (1) hand, (2) instruments, (3) dress, as he believes that infection takes place by contact only and not through the air. The hands should be thoroughly washed with soap and water and a nail-brush, until the nails and every fold of the skin are spotless. After this they should be immersed in a solution of corrosive sublimate, 1 in 1,000. Instruments should be sterilized by boiling. Cleanliness of the dress, especially of the nurse, is important, and absorbent pads of cotton or wool should be used.

**Asepsis of the patient.** As few vaginal examinations as possible should be made. The vulva and adjacent parts should be washed with soap and water. For a lubricant a solution of corrosive sublimate in glycerine, 1 in 2,000, he considers the best. There are objections to douching the vagina with corrosive sublimate:

(1) Such a douche given during the first stage of labor prolongs it. It is only necessary in the rare event of the vagina already containing some decomposing stuff or gonococci.

(2) The douche fluid may not flow freely away, and enough may be absorbed to injure or kill the patient. Therefore, sublimate douches should only be given by skilled persons.

(3) An ignorant or careless nurse might inoculate septic germs with the syringe.

These objections apply especially to douches before delivery and during the lying-in. When the medical attendant himself gives an antiseptic douche immediately after labor is ended, he has it in his own power to prevent the douche from doing harm. If the hands or instruments have been in uterus, or uterine contents are unhealthy, an intra-uterine douche should be given.

#### HYSTERECTOMY FOR PUERPERAL SEPSIS.

C. B. Penrose<sup>\*</sup> reports a case of acute sepsis following a miscarriage at the fourth month. Five days later the patient was in a very critical condition with a temperature of 105° and pulse of 150. Immediate celiotomy and removal of the uterus at the vaginal junction was done. Relief after the operation was immediate, and the recovery was very satisfactory. Examination of the specimens removed showed acute puerperal infectious perimetritis with abscess formation, metritis and endometritis, the infecting organism being a staphylococcus.

J. M. Baldy<sup>\*</sup> reports a case of puerperal septicemia with thrombosis of the veins in the uterus and broad ligaments. The patient had had a temperature ranging from 102° to 104°, with a pulse of 130 to 140. The curettage and douching of the uterus causing no change in the patient's condition, celiotomy was done and the uterus removed on the twenty-fourth day. All the veins running through the broad ligaments were filled with a grayish-colored clot. The patient made a good recovery, with the exception of an attack of phlegmasia alba dolens of the right leg.

THE INDICATIONS FOR EXAMINATION OF THE UTERUS AND THE TREATMENT OF CERTAIN CONDITIONS IMMEDIATELY FOLLOWING CHILDBIRTH,

This is a subject discussed by HENRY D. FRY.<sup>10</sup>

<sup>\*</sup> American Journal of Obstetrics, May, 1896, p. 678.

<sup>10</sup> *ibid.*, p. 673.

<sup>10</sup> Journal of Obstetrics, January, 1896.

In almost all cases in which there is "a slow getting up" after childbirth there will be found some elevation in the temperature range. No matter how well the patient expresses herself as feeling, if the temperature range is only one degree above the normal curve the attendant should not rest satisfied until he has explored the condition of the uterus and ascertained the cause. Next to the thermometer, the most valuable index of minor departures from the normal state is the condition of the lochia. They may be too free; may contain clots or shreds of tissue; they may be purulent or offensive in odor.

Investigation of the uterus will generally bring to light some or other of the following faulty conditions:

(1) The uterine tumor is larger than it should be and is slightly sensitive. Retraction has been deficient, and there has been oozing into the cavity and some blood-clots retained.

(2) Retention of some fragments of placental tissue or shreds of membrane.

(3) The action of the bacteria of putrefaction on these tissues, and the development of ptomaines, with or without absorptive fever.

(4) Necrotic endometritis, localized or diffused, simple or purulent.

(5) Displacements of the uterus.

After referring to precautionary measures that should be employed in every case of labor, he goes on to the treatment of the abnormal conditions detailed above: Hot vaginal douches, the use of the dull curette and intra-uterine douches, with the introduction of iodoform gauze. The latter he used more for its hemostatic effect and not for drainage, believing as he does that it can only drain serous fluid — clots, *débris* and pus being left behind. The treatment of displacements should also be attended to.

(To be continued.)

## Reports of Societies.

### SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, March 11, 1896, DR. M. H. RICHARDSON in the chair.

#### TUMOR OF THE LIVER.

DR. ELLIOT: This specimen is a tumor of the liver. It has a certain appropriateness this evening in that I thought it was a tumor of the kidney. It shows that an enlargement of the right lobe extending down can be very easily mistaken for kidney. The patient was about fifty, and had been ill for six months, and had had a tumor in the right side for three months. She had lost flesh. This tumor appeared, grew rapidly and felt very hard. On opening the abdomen I saw at once it was the liver. The abdominal walls were glued in front to the tumor, and the intestines were glued to it behind. I examined the liver carefully, and saw there were no other nodules there. This was a solid, round, almost pedunculated nodule. It had a very broad base. I decided it was primary cancer of the liver or of the gall-bladder extending to the liver, and decided to remove it. I took it off with the Pac-

quelin cautery. It came out much easier than I expected it would. This is about one-fourth of the entire liver.

DR. WATSON: I am particularly interested in Dr. Elliot's report of this case because of its being similar to one in which one year ago, I excised the gall-bladder and about one-fourth of the right lobe of the liver, the patient living sixty days afterward and being relieved of pain. In that case also there was a large movable tumor extending from the border of the ribs to the crest of the ilium. It was found to consist of cancerous disease of the gall-bladder and lower anterior portion of the right lobe of the liver. The gall-bladder contained 102 small stones. It was removed after being separated from numerous adhesions between it and the intestines, and after division at its junction with the cystic duct. The diseased area of the liver was then removed in three separate pieces after three rubber ligatures had been passed through the liver and drawn tight beyond the line of the incisions; hemorrhage was entirely avoided in this way. The rubber ligatures were left *in situ*, and came away at the end of three weeks. The patient was relieved of pain, which was all that was hoped for from the operation, until shortly before her death, which occurred sixty days afterward.

DR. RICHARDSON: Take Dr. Watson's, Dr. Elliot's and Dr. Porter's cases of operation for cancer of the liver, and it opens up a field of very great magnitude. The pathologists will tell whether cancer of the liver can ever be cured by excision, but, as Dr. Watson has said, I have no doubt occasionally the patient is saved a great deal of discomfort. I had this morning a case of contracted gall-bladder adherent to the duodenum, stomach, transverse colon and omentum. I saw it was contracted upon gall-stones. I separated the contracted gall-bladder from the under surface of the great lobe with the scissors, tied off at the cystic duct and removed it. I did this because it seems to me that contracted gall-bladder is always a menace in that it may be the origin of cancer. I think the pathologists will tell about the frequency and the dependence of cancer of the liver upon chronic thickening, contraction and inflammation of the gall-bladder. Clinically, the association is very common of cancer of the liver with cancer starting in the gall-bladder or in the bile-passages through the head of the pancreas or somewhere through the foramen of Winslow.

About a month ago I saw a woman with a rounded tumor of the region of the right lobe of the liver. I examined many times, and made the diagnosis of cancer of the liver. The diagnosis depended upon the fact that the tumor went up and down with respiration. It proved to be cancer of the liver. The woman recovered and went home. That was one large mass from the under surface of the right lobe, with nodules scattered through the whole liver apparently.

DR. WHITNEY: Primary cancer of the liver as independent of the gall-bladder is considered a rarity. No doubt, primary cancer of the liver does occur, and perhaps more frequently than we think. As regards the relation of inflamed gall-bladder to cancer of the liver, I have no knowledge as to the frequency of their association.

DR. RICHARDSON: I have operated in one case in which there was dilated gall-bladder with thickened walls, with gall-stones and cancer of the internal surface of the gall-bladder.

#### TUMOR OF THE KIDNEY.

DR. W. F. WHITNEY: A tumor of the kidney, of some form, is not of infrequent occurrence, and may from the symptoms attract attention before death, but is often first discovered at the autopsy. The subject will be taken up chiefly from its practical bearing.

First come the cystic tumors, the differential diagnosis of which is of importance in determining what can be interfered with and what best left alone. At the head comes hydronephrosis—a cyst from simple mechanical obstruction, where the kidney is dilated by the retention of its own fluid. It will be interesting to consider why there is enormous dilatation in some cases, and but very little in others. Here, for example, is a large sack, with a thin wall not much thicker than a piece of paper, that was removed during life and illustrates well a hydronephrotic kidney. Through the ureter a probe can be passed into the pelvis, showing that there is no organic stricture, only a valvular obstruction. Here is another, also taken out during life, one-half of which only is reduced to a cystic condition, while the other is solid and normal. This is explained by double ureters, one of which is occluded by a stone. The cystic part, however, shows but little increase of size.

It is now generally conceded that in order to have one of the large hydronephrotic kidneys like the first there must be a valvular opening close to the kidney, which acts intermittently. Perhaps the recumbent position may allow the sack to be partly emptied so that the normal secretion is not continually prevented. In cases like the second there is constant pressure, which leads to a gradual destruction of the kidney substance, but without great dilatation.

The prognosis of the removal of these forms is good, provided that the other kidney is sound.

The next form of cystic tumors arises from structural changes in the kidney itself, some of them clearly developmental. In this class is the large unilocular cyst often found first post-mortem. It usually lies at one end of the organ as a cystic mass, often as large as a man's head, with a very thin wall into which the capsule of the kidney passes. The explanation of their origin is not wholly satisfactory. The fluid contained in them is very thin, but contains traces of urinary salts. From this it is supposed that an atresia of the collecting tubes connected with that part of the labyrinth had taken place and a local hydronephrosis resulted, the remainder of the kidney being unaffected. Therefore, if their removal is indicated, that of the sack is all that is necessary.

On the other hand, the multilocular cystoma of the kidney is better understood in its pathology. Of these there are two forms. First, there is the congenital one, which is due to atresia of the papillary portion from fetal inflammation, or, what is more reasonable, a malformation. In this, there is an incomplete formation of the straight tubules and a failure to unite with the convoluted ones. If all the papillæ were thus affected life would be impossible, but usually there are some portions which are still normal, and in such cases adult life can even be reached.

The second form has the closest analogy with the adeno-cystoma of the ovary and breast. In it the cysts are formed by growth from the glands just as in the ovary. All the stages have been followed. At the beginning little side-growths are given off from the

tubular epithelium. These are gradually separated from the tube, become hollowed out and filled with fluid; from the inner surface papillomatous growths take place, covered by the lining epithelium. Between the cysts, portions of the kidney substance are still preserved, so that secretion can still take place to a certain extent. The single cysts are not large; but the kidneys can form masses the size of a man's head, and may reach this at birth and form a serious obstacle to delivery. On the other hand, their growth can be gradual, and it is not until late in life that the patient's attention is called to it and they are brought to the surgeon's notice. Here the diagnosis is of importance. Unfortunately, it can only be surely made by an exploratory laparotomy. If it exists the other kidney must be carefully felt for, and if found similarly diseased, the question of further operative interference must be carefully weighed; for while both may secrete enough urine to carry on life, if one alone is suddenly called upon to carry on the function it may not be able to do so, and a fatal result will follow.

In the solid tumors, there is a most interesting series. They come under the sarcoma, adenoma and cancer. The first arises from the mesoblast, and occurs in the same forms as in other parts of the body, especially as round and spindle-celled types. They are more apt to occur in children, even congenitally, but may be met with in advanced life. They appear as very soft, medullary, somewhat lobulated tumors, following the general outline of the kidney. In one from an adult, forming a mass more than a foot in its longest diameter, there were but few symptoms beyond gradual failure, and at the autopsy the disease was found to have extended through the renal vein into the cava.

The adenomata are often found post-mortem as small, whitish tumors, which are of the same structure as the kidney, but sharply differentiated to the eye by their pallor. In man they rarely reach a large size, but in the animals it is quite different—one from a pig, in the collection, equalling half the kidney in size.

A tumor which was removed by Dr. Scudder and reported elsewhere in detail, belongs in this group. It represents a stage where an adenoma has undergone a cystic degeneration, associated with an extensive hyaline degeneration of the stroma, giving to it a solid character, the cysts being microscopic in size. Such tumors are not malignant.

From their outline, cancers are usually described as diffuse or nodular. In the former the shape of the kidney is retained and its size is but little increased, but there is throughout a diffuse cancerous infiltration, in structure resembling the ordinary adeno-carcinoma. In the second form the nodules of new growth are separated by areas of normal tissue. At times they appear beneath the capsule or break through into the pelvis.

Finally, there are tumors the starting-point of which is very difficult to determine. From a histological point they are extremely interesting, while from a practical one they are malignant. I refer to those that may originate from aberrant fragments of the suprarenal capsules. It is to be remembered that the small yellow nodules found in the cortex of the kidney, and which, at first, were regarded as fatty tumors, have a structure like the capsules. These fragments are not only confined to the kidney, but may be found anywhere scattered along the course of the genito-urinary track. Chiari reports having met them close to the spermatic cord, and two small nodules which Dr. Elliot

recently removed from the surface of the Fallopian tube I found to be exactly like the adrenals in structure. It is from these particles that some tumors of the kidney originate. Structurally they are very confusing, in parts recalling sarcoma, in parts looking like cancer. The chief points of diagnostic importance are the presence of very large cells, much larger than those of the kidney, often of an old gold or saffron color, together with a high degree of vascularity, often to the point of hemorrhage. These fragments may explain some forms of obscure abdominal growths, which will be a subject for future study.

(To be continued.)

## AMERICAN MEDICAL ASSOCIATION.

FORTY-SEVENTH ANNUAL MEETING, ATLANTA, GA.,  
MAY 5, 6, 7 and 8, 1896.

(Continued from No. 2, p. 46.)

### THIRD GENERAL SESSION.

DR. E. E. MONTGOMERY, of Philadelphia, read the report of the Board of Trustees of the Association, which showed a total balance of \$10,080.98. The Board considers this a most excellent showing, when we take into consideration the financial condition of the country and the radical change in the policy of the *Journal* instituted at the last meeting.

The Board placed on record their appreciation of the valuable services of their late colleague, Dr. James E. Reeves, and their deep regret at his untimely death.

On motion, the report was adopted.

DR. GEORGE H. ROHE, of Maryland, in the absence of Dr. A. L. Gihon, read the report of the Rush Monument Fund Committee, which, on motion, was received and filed.

The Nominating Committee made a partial report, namely, as to the place and time of meeting, recommending Philadelphia, and the first Tuesday in June, 1897. Unanimously adopted.

DR. H. D. HOLTON, of Vermont, offered to be one of forty to give \$100 toward the Rush Monument.

On motion of Dr. Holton, the trustees were authorized to establish a building fund.

VICE-PRESIDENT DR. J. C. LE GRAND then took the chair, and DR. NICHOLAS SENN, of Chicago, delivered the Address in Surgery. He selected for his subject,

### SOME OF THE LIMITS OF THE ART OF SURGERY.

Modern surgery has attained a degree of development which entitles it to the distinction of a science and an art. As a science, surgery is of recent date, having been founded and perfected during the last half of the present century. As an art, it has been practised for centuries by our ancestors, with credit to themselves and benefit to the injured, the crippled and the sick. When Boyer wrote the introduction to his classic work on surgery, he expressed the conviction that surgery had reached perfection. How little did he dream of the great changes that would be wrought in the practice of his cherished profession by the progressive pathologists and surgeons of the next few generations. What a contrast between the standing of the surgeon of to-day in the community, the profession, and from a scientific aspect, as compared with his colleagues of only a century ago!

Modern pathology and the new science of bacteriology have laid a permanent foundation for the steady and progressive advance of surgical thought and work. The inflammatory complications of wounds and the etiology of most of the chronic infective surgical diseases have been cleared up by bacteriologic investigations during the last twenty-five years, and the knowledge thus gained has enabled the surgeon to prevent in a large measure the former, and to treat intelligently and with increased success the latter. The wonderful development of operative surgery during the same time is one of the earliest and richest fruits reaped from the vast and fertile field sown and cultivated by bacteriologists of every civilized nation. Antiseptic and aseptic surgery have smoothed the rough and rugged pathway of the practical surgeon. The almost universal introduction of antiseptic and aseptic precautions in the treatment of wounds in private and hospital practice has nearly eradicated the three greatest enemies of the surgeon of old, namely, hospital gangrene, erysipelas and secondary hemorrhage, and minimized the occurrence of supuration and its manifold immediate and remote complications.

In considering special work, Dr. Senn said that the *furor operativus* manifested in special departments of surgery, and its obvious results, render the standing and legitimate scope of the general surgeon very uncertain and indefinite at the present time. Let the general surgeon turn to the right or to the left, advance or retreat, and he finds himself on reserved territory. As for the physician, he is expected to answer night calls, prescribe for diarrhea and whooping-cough, watch cases of typhoid fever, measles, scarlatina and small-pox; and should complications arise and he does not report to the proper authority, he renders himself liable to censure. Much of this ill-applied energy in the surgical world has resulted in detriment to patients and in retarding actual surgical progress. Operative surgery has been carried to extremes.

The speaker next passed to the consideration of antiseptics and asepsis, saying that the marvellous reduction in the mortality following injuries and operations which the present generation has witnessed is largely due to the prevention of wound complications by the employment of efficient antiseptic and aseptic precautions.

The employment of antiseptic and aseptic precautions in the treatment of intestinal and accidental wounds has greatly diminished the frequency of progressive phlegmonous inflammations and their often disastrous consequences. That such an occurrence cannot always be prevented, even by the most scrupulous care and attention to details, every surgeon of experience is willing to admit. In the most virulent forms of phlegmonous inflammation the most heroic and timely treatment, local and general, is often fruitless in averting speedy death. In the most desperate cases the surface lesion is often insignificant; the infection, following the lymphatic pathways, soon reaches the general circulation, resulting in death from acute sepsis before any decided gross pathologic lesions have appeared at the seat of infection or in any of the internal organs. How rapidly general infections may take place has been shown by the experiments of Schimmelbusch, who found micro-organisms in the spleen five to ten minutes after infection of a wound. Colin and Niessen demonstrated by their experimental work that amputation a few minutes after inoculation of the ears and limbs of rabbits with pure cultures of anthrax did not

protect the animals against generalization of the disease. Such cases in the human being fortunately are seldom met with; but when they do occur, the art of surgery is powerless in arresting the progress of the disease. Parenchymatous injections of solutions of carbolic acid or corrosive sublimate along the course of the inflamed lymphatics, and the internal use of alcohol in heroic doses, promise the most, but in the great majority of cases the extension of the infection continues and terminates speedily in death from general sepsis. In the treatment of diffuse phlegmonous processes it is now customary to make free incisions, establish free drainage, and disinfect the cavity by flushing it freely with a safe and yet efficient antiseptic solution, such as a saturated solution of acetate of aluminium, a three-per-cent solution of carbolic acid, or a 1-5,000 solution of corrosive sublimate, and apply to the part hot compresses wrung out of the same solution.

Closely allied to phlegmonous inflammations of the soft tissues is acute suppurative osteomyelitis, as it is caused by the same kinds of microbes and results in more or less extensive destruction of tissue. The etiology and pathology of this disease are now well understood and upon them is based the early operative treatment which is generally indorsed by the profession at the present time. The early removal of the osteomyelitic product by operative interference, as a rule, relieves pain promptly, limits necrosis, guards against joint complications and recognizes the danger from general sepsis. Immobilization of the affected limb in proper position, and the exposure of the osteomyelitic focus by the use of the chisel or gouge as soon as a positive diagnosis can be made, are the modern resources which have succeeded in greatly reducing the mortality of this disease as well as its immediate complications and remote consequences.

In considering tuberculosis of joints, Dr. Senn stated that only a few years ago the surgeons who paid special attention to diseases of the joints were enthusiastic advocates of early resection or arthrectomy in cases of tubercular joint affections. It was believed that such medical treatment would succeed in eliminating the local affection and in preventing the extension of it to distant organs by reinfection from the peripheral focus. Statistics prove that these hopes are unfounded and conscientious surgeons have substituted largely in place of operative treatment conservative measures. A change in practice has taken place, largely due to the beneficial effects obtained from intra-articular and parenchymatous injections of iodoform-glycerin injection. Dr. Senn has resorted to this treatment in hundreds of cases with the most satisfactory results. In about one-half or two-thirds of all cases of uncomplicated joint tuberculosis this treatment proves curative. It is of special value in the treatment of tubercular abscess in communication with a tubercular joint or bone. From one to three or four injections usually suffice in obliterating the abscess cavity.

Coming to the subject of malignant tumors, he said that the essential cause of carcinoma and sarcoma remains to be discovered. The science of surgery must first divulge the true nature of tumors before we can expect a decided advance in their more successful treatment. The essential features of the modern treatment of malignant tumors he summed up very briefly as follows: Operate early and thoroughly. The treatment of inoperable sarcoma by injections of

the sterilized toxins of the streptococcus of erysipelas and the bacillus prodigiosus has not accomplished the expected results.

The surgery of the three great cavities next received attention, after which the surgery of the skull and brain were dealt with. In Dr. Senn's opinion, operative interference is absolutely indicated in fractures of the cranial vault under the following circumstances: (1) All open fractures, including gunshot and punctured fractures; (2) Depressed fractures attended by well-defined symptoms, caused either by the depression or intracranial complications; (3) Rupture of the middle meningeal artery, with or without fracture of the skull. The indiscriminate use of the chisel and the trephine in the hands of the inexperienced practitioner is fraught with danger, and should not be encouraged by teachers and expert surgeons. Cerebral localization and aseptic surgery have made it possible to treat a few intracranial lesions successfully by direct operative interference.

The abdominal cavity was largely a *terra incognita* to the surgeon of less than half a century ago. Today it is the favorite battle-ground of the average surgeon and the select field of the so-called abdominal surgeon. Notwithstanding the wonderful improvements in the technique of operations upon the stomach, partial gastrectomy and pylorotomy have yielded anything but encouraging results. In nearly fifty per cent. the patients subjected to radical treatment for malignant disease of the stomach succumbed to the immediate effects of the operation. Dr. Senn has opened the abdominal cavity for the surgical treatment of malignant disease of the stomach nineteen times, and only in one case did he find the disease limited to the organ first affected and in this case the general health of the patient had been so much deteriorated by the obstructive pyloric carcinoma as to contraindicate a radical operation; in all of the remaining cases a pylorotomy or partial gastrectomy was out of the question, as the carcinoma of the pylorus or stomach had extended to adjacent organs or had given rise to regional infections through the lymphatic glands sufficiently to contraindicate any attempts at radical removal of the disease.

Dr. Senn next considered at length the organs of generation, saying that the greatest onslaught of modern surgery has been upon the organs of generation, male and female. The future historians who will record the work of many gynecologists belonging to the present generation will have reason to express their surprise at what disasters the art of surgery has produced when plied in cases far in advance of a scientific foundation. Here and there we hear a feeble voice protesting against the indiscriminate surgery upon the organs of generation of the opposite sex, but the mutilating work continues in spite of such opposition and well-meant advice. Dr. Senn said when he arraigns the gynecologists before such a representative body composed of representative medical men of this country for innumerable and inexcusable transgressions of the rules which ought to govern and control the art of surgery, he does not include the scientific, conscientious workers in that department of surgery, but his remarks apply to a class of routine operators which had recently grown to alarming dimensions not only in this, but in nearly every country which has been penetrated by the dim rays of so-

called bold surgery. The new generation of doctors finds no longer satisfaction in practising their profession in some rural district. They have their eyes on large cities and have heard of enticing fees paid to specialists for insignificant operations. Why buy a horse and saddlebags when a fortune awaits them in devoting themselves to a specialty, more particularly gynecology? The recent graduate or the man who has become disgusted with country practice seeks a much-employed gynecologist, follows his work for a month or two and returns to his prospective field of labor a full-fledged specialist. He is now ready to extirpate the uterus, remove ovaries and Fallopian tubes, sew imaginary lacerations of the cervix and perineum. Do you suppose that such an aspirant for gynecological fame ever examines a woman and finds her perfect? Is it not true that in nine out of ten cases he finds something to mend? In order to show that the speaker's views were real and not visionary, he related a few instances.

Laceration of the perineum is another subject of the amateur gynecologist. The extent of laceration and the symptoms caused by it are not always carefully considered in deciding upon the propriety of an operation. Dr. Senn said that to do an operation on the perineum in five or seven minutes still serves as an attraction for the lookers-on in many private hospitals and gynecological clinics. He fully appreciates the value of a well-performed perineorrhaphy in proper cases, but he was equally well satisfied that the operation has often been performed unnecessarily, and that it requires more than five or seven minutes to perform it properly.

The frequency with which women are being castrated is one of the most flagrant transgressions of the limits of the art of surgery. It is not unusual for one operator to exhibit from five to six normal ovaries as the result of half a day's work. All kinds of excuses are made for this kind of surgery. Dr. Senn asked the question, Where is this wholesale unsexing of our female population going to end? The beginning of the end has come. The army of women minus their essential organs of generation is beginning to raise its voice against such mutilating work. The number of women who willingly sacrificed their ovaries to restore their shattered health without securing the expected relief has increased to an alarming extent. This sad experience has made the gynecologists more desperate and bold. It is difficult to say where this rage for the removal of the female sexual organs will end or what organ will be the next battle-ground for the aggressive gynecologists. The clitoris, the vagina, the cervix uteri, the ovaries, the Fallopian tubes, the uterus and its ligaments have successively passed through a trying ordeal of operative furor. What the next fad will be is impossible to foretell.

He could not dismiss the subject of genital surgery without making a strong plea in favor of conservatism in the treatment of prostatic hypertrophy. Reference was made to the experiments of J. W. White on animals in this connection, also the clinical experience of Ramm, whose results covered about the same ground as those of White, urging the utility of castration as a legitimate surgical procedure in the treatment of non-malignant obstructive enlargements of the prostate. The reason the speaker alluded to this subject was this, he feared that when this operation on aged men for hypertrophy of the prostate becomes common

property and is indorsed by surgeons of high standing, it would be misapplied in the same way, probably to a lesser extent, than the removal of normal ovaries. Men will be castrated for stone in the bladder, chronic cystitis and malignant disease of the bladder. It is always easy or possible to make a positive differential diagnosis between simple hypertrophy of the prostate and some of the conditions which simulate it so closely. In doubtful cases it appears to him it would be advisable to make the diagnosis sure by a suprapubic cystotomy before resorting to a mutilating operation, rather than remove the testicles and later discover a bladder or encysted stone or malignant disease of the bladder or prostate. Castration is such an easy operation that every tyro in surgery will be tempted to perform it upon willing subjects suffering from obscure affections of the bladder, complicating hypertrophy of the prostate gland. The Ramm-White operation deserves a fair trial at the hands of competent surgeons, in well-selected cases, but Dr. Senn apprehends evil in the future, not so much from the proper use, as the abuse of this procedure.

Finally, he had written and delivered his address with malice toward none, in the interest of the suffering portion of our population, for the true advancement of the science and art of surgery, and as a plea for recognition of the good work done by the great and backbone of our profession, the modest, toiling, inadequately remunerated general practitioner.

On motion of DR. MCLEAN, of Detroit, the thanks of the Association were tendered to Dr. Senn for his masterly address.

The SECRETARY read his annual report, which contained nothing of special interest. On motion it was adopted.

The following preamble and resolutions were offered by DR. SENN, Chairman of the Committee on Vivisection of the District of Columbia:

*Whereas*, The members of the American Medical Association recognize the fact that the development of scientific medicine has resulted largely from experiments upon the lower animals; and whereas anesthetics are habitually administered to animals subjected to painful experiments; and whereas restrictive legislation is in our opinion unnecessary and opposed to the continual progress of medical science; and whereas it is an unjust reflection upon the humanity of those engaged in animal experimentation to enact laws requiring them to use anesthetics and appointing inspectors to see that they do so; and whereas far more unnecessary pain is constantly being inflicted upon the lower animals for sport and for game than in biological and pathological laboratories; and whereas no evidence has been presented by those who advocate restrictive legislation showing that abuses exist in the District of Columbia; and whereas results of great practical importance have been attained by experiments on the lower animals made in the Government laboratories in the District of Columbia; therefore, be it

*Resolved*, That the American Medical Association earnestly protests against the passage of Senate Bill No. 1553, entitled "A Bill for the further prevention of cruelty to animals in the District of Columbia," or any modification of this Bill, unless it shall first be shown by an impartial investigation that cruel and unnecessary experiments are being performed in the District of Columbia, and that existing laws do not provide suitable punishment for cruelty to the domestic animals.

*Resolved*, That copies of these resolutions, attested by the signatures of the President of the American Medical Association and of its committee appointed to draft these resolutions, be sent to the chairman of the committees in

the District of Columbia in the House of Representatives and Senate of the United States.

NICHOLAS SENN, J. MCFADDEN GASTON,  
WILLIAM OSLER, DONALD MCLEAN.  
GEORGE M. GOULD.

On motion of DR. E. D. FERGUSON, of Troy, N. Y., the resolutions were adopted.

On motion of DR. WESTMORELAND, the programme for the Jenner Centennial Memorial was made the order of the day.

The SECRETARY read the following from the New York County Medical Association:

*Resolved*, That this Association declares its continued attachment to the Code of Ethics of the American Medical Association, and deprecates any management of the affairs of that association except by the various State and County Associations and Societies in affiliation therewith, by their regularly appointed delegates.

*Resolved*, That delegates appointed by this Association to the meeting to be held in Atlanta, Georgia, be instructed in accordance with this action.

On motion, the resolutions were received and filed.

DR. H. D. DIDAMA, New York, read the address of DR. N. S. DAVIS, of Chicago, this being the opening paper of the Jenner Centennial.

The Association then adjourned to continue this part of the programme at 3 P. M.

#### AFTERNOON SESSION.

DR. C. S. MCGAHAN, Minnesota, read for DR. C. N. HEWETT, of Red Wing, Minn., his paper entitled,

A TRIBUTE TO THE MEMORY OF EDWARD JENNER, by title.

DR. J. COCHRAN, Alabama, followed by reading a paper, the title of which was not given.

DR. GEORGE M. STERNBERG read a paper entitled SCIENTIFIC RESEARCHES RELATING TO THE SPECIFIC INFECTIOUS AGENT OF SMALL-POX AND THE PRODUCTION OF ARTIFICIAL IMMUNITY IN THIS DISEASE.

DR. DIDAMA presented by title a record by DR. D. H. STORER, Rhode Island, of the memorials, medals, etc., of Edward Jenner.

DR. F. C. MARTIN, Massachusetts, read a paper on THE PROPAGATION OF VACCINE VIRUS.

DR. EUGENE FOSTER, of Augusta, Ga., read a voluminous and valuable paper on the

#### STATISTICS OF VACCINATION.

On motion of DR. J. F. HIBBARD, Indiana, it was

*Resolved*, That the papers read at this Jenner Centennial Celebration be referred to the Jenner Centennial Committee for revision and selection of those deemed proper to be published in book form and in such number as the committee may believe there will be demand for.

On motion of DR. DIDAMA, the thanks of the Association were tendered to the writers of the papers.

#### FOURTH GENERAL SESSION.

The Treasurer, DR. HENRY P. NEWMAN, of Chicago, read his report, showing a healthy condition of the treasury. On motion, the report was adopted. The address on State medicine was then delivered



by DR. GEO. H. ROHE, of Maryland. His subject was

#### THE PURIFICATION OF PUBLIC WATER-SUPPLIES.

At the outset the speaker stated that the most vitally important sanitary problem confronting American municipalities at the present day is, unquestionably, the supply of pure water for drinking and other domestic purposes. The widespread prevalence of typhoid fever may be practically looked upon as a measure of pollution of the drinking-water. Depending, as this disease does, almost entirely upon an infected water-supply, the importance of having the latter of a pure quality is self-evident. In 1894, 25 of the principal cities of the United States had an average typhoid mortality of 39.6 per 100,000 of population. Those cities, which had the largest mortality from this disease, were supplied by a highly suspicious quality of drinking-water.

It will be hardly necessary at the present day to insist upon etiological relation of infected drinking-water to typhoid fever. The numerous epidemics in this country and abroad, which have been studied with so much care by eminent sanitarians, have demonstrated this relation. While cases doubtless occur in which the disease cannot be traced to the water-supply, these constitute the vanishing minority; the overwhelming majority being unquestionably due to infected water.

In epidemics of cholera, a similar relation exists between the outbreaks and extension of the disease to an infected water-supply. Aside, however, from the production of these specific diseases, pure water, or water free from all sorts of uncleanness, is demanded by the "sanitary conscience" of the public.

In sparsely settled districts, or where a supply of unpolluted water can be brought from a distance to a large community, it will probably be better to secure such a pure supply rather than purify a source of supply which has been polluted; but in the majority of instances, particularly in the eastern and central sections of this country, the procurement of such an unpolluted supply is practically barred by financial considerations. We are therefore reduced to one of two alternatives — either to limit as much as possible, or altogether prevent, which is practically impossible, the access of impurities (notably of sewage or excremental matter) to the sources of supply; or else to resort to some method of purification of the water after it has become polluted.

The city of New York has recently chosen the first alternative mentioned, by the purchase of ground immediately bordering on the streams furnishing the drinking-water to that great metropolis. By the removal of sources of pollution from the area of land so acquired, the endeavor has been made to secure a pure drinking-water. He had not at hand the figures showing the amount of money expended in order to accomplish this purpose, but the sum must have been extremely large. In Chicago, the extraordinary outbreak of typhoid fever from 1889 to 1893 led to the extension of the in-take pipes in Lake Michigan to a distance of four miles from the shore, and the constant diminution of the sewage contamination has reduced the typhoid mortality from 159.7 per 100,000 in 1891 to 31.4 per 100,000 in 1894.

A great impetus to filtration was given by the experiments conducted under the auspices of the Massachusetts State Board of Health at Lawrence in that

State, and carried out so thoroughly by Mr. Hiram F. Mills and Mr. Allen Hazen. These experiments, conducted with painstaking care for a number of years, prove conclusively that water, no matter how polluted, can be rendered pure by simply filtering the same through sand filters, provided certain cautions are observed regarding the construction of the filters, the rate of filtration, and other conditions varying with the character of the water to be purified.

For many years filtration through sand has been used by European municipalities to secure purification of water. In London most of the drinking-water has been filtered for upwards of forty years. The filter-beds of Berlin cover an area of upwards of thirty acres. In many of the Continental cities the drinking-water is subjected to filtration. The construction and practical management of filters have been investigated with great care. Comparative studies of the efficiency of sand filters, and of various processes of so-called "mechanical filtration," have been made recently in Providence, R. I., and at Lawrence, Mass. While the results obtained by different investigators have not been in entire agreement, the prevailing opinion of sanitarians and engineers is that sand filtration, where it can be adopted, gives the best results in purification, at the lowest cost of construction.

DR. BULKLEY, of New York, of the Executive Committee, offered the following resolutions and recommended their adoption:

*Resolved*, That in accordance with the standing rule of the Association, the Committee of Arrangements for the next session is requested to arrange the meetings of the Association and prepare the program for the sections, so that they will not conflict. It is suggested that if the general sessions on Wednesday and Thursday be called at 11 o'clock, it will remedy the evil.

Unanimously adopted.

*Resolved*, That the Committee of Arrangements for next year and hereafter be directed to prepare signs for each state and territory, also for the District of Columbia, and Army, Navy and Marine Hospital Service, and to locate the hall of meeting, that the delegates shall meet beneath them for the selection of members of the Nominating Committee.

*Resolved*, That the elections for such members of the Nominating Committee shall only be legal when held in these localities.

On motion of DR. LOVE, this was laid on the table.

The following amendment was offered by the business committee:

*Resolved*, That there be made an Executive Council of five, consisting of the three officers of the Executive Committee and two officers chosen by election. Of this council of five one must belong to the section on Practice of Medicine, and one to the section on Surgery and Anatomy. To this Executive Council shall be delegated all the duties of the Executive Committee during the intervals between its meetings.

Laid over for one year.

DR. ALONZO GARCELON, of Maine, offered the following resolution:

*Whereas*, This Association has authorized the trustees to establish a building fund, and whereas the question of a permanent location for the *Journal* has never been decided by a vote; therefore, be it

*Resolved*, That the trustees be, and are hereby instructed, to cause a vote by ballot to be taken, and on this question all members shall have the right to vote. The ballots may



be received from and after June 1st until July 31st, when the ballot shall close. No ballot shall be counted in favor of any particular place, unless the name of the member voting shall be signed thereto. The ballot shall be preserved by the trustees until the next annual meeting of the Association, but the result shall be published in the *Journal* when the count shall have been completed.

The resolution was adopted.

DR. J. COCHRAN read the report of the Committee on National Department of Public Health, which on motion was adopted, the committee enlarged to include a member from each State, and continued.

DR. SENN, chairman of the Committee on President's Address presented the following resolution :

*Resolved*, That the Secretary of this Association be requested to inform the Secretary General of the next International Medical Congress that unless the English language is fully recognized, this Association declines to send delegates.

Adopted.

The report of the Committee on Nominations was then read by the Chairman, DR. H. A. WEST, as follows :

President — Dr. Nicholas Senn, Chicago.

First Vice-President — Dr. George M. Sternberg, Washington, D. C.

Second Vice-President — Dr. Edmond Souchon, New Orleans.

Third Vice-President — Dr. J. B. Thomas, Pennsylvania.

Fourth Vice-President — Dr. Willis F. Westmoreland, Atlanta.

Treasurer — Dr. H. P. Newman, Chicago.

Assistant Secretary — Dr. F. F. Schneidman, Philadelphia.

Librarian — Dr. George W. Webster, Chicago.

Chairman of Committee of Arrangements — Dr. H. A. Hare, Philadelphia.

Trustee to fill Vacancy — Dr. C. C. Savage, Nashville.

Trustees — Drs. E. E. Montgomery, of Philadelphia; J. M. Mathews, of Louisville, and C. A. L. Reed, of Cincinnati.

Judicial Council — Dr. George W. Stoner, U. S. Marine Hospital Service; Dr. C. W. Foster, of Maine; Dr. J. McF. Gaston, of Georgia; Dr. I. N. Quinby, of New Jersey; Dr. H. Brown, of Kentucky, and X. C. Scott, of Ohio.

Address in Surgery — Dr. W. W. Keen, of Philadelphia.

Address in Medicine — Dr. Austin Flint, of New York.

Address in State Medicine — Dr. J. Cochran, of Alabama.

On motion the report was adopted.

DR. SENN was then escorted to the platform by a committee of two, presented by Dr. Cole, and as President-elect of the Association, made a timely and eloquent speech of acceptance.

After the introduction and adoption of resolutions of thanks, the Association adjourned to meet in Philadelphia the first Tuesday in June, 1897.

THE Order of the Double Dragon, carrying the rank of Mandarin, has been conferred upon Surgeon-Major Hueston of the British Army by the Emperor of China for services rendered the wounded during the Japanese war.

## Recent Literature.

*Borderland Studies.* Miscellaneous Addresses and Essays pertaining to Medicine and the Medical Profession, and their Relations to General Sciences and Thought. By GEORGE M. GOULD, A.M., M.D. Philadelphia: P. Blakiston, Son & Co. 1896.

Dr. Gould as editor of the *Medical News* was an earnest and fearless writer upon many subjects. His attention was not confined to the questions immediately connected with his profession, but was given thoughtfully to the wider and deeper relations of medical sciences to human life and thought. The present essays, with five exceptions, have been published previously — some of them in the editorial columns of the *Medical News*. Even those which seemed to us at the time to have only an ephemeral value, prove as interesting on a second reading as when they dealt with immediate issues. This certainly justifies giving them the permanence of book publication. The longer essays are much the best.

The opening one is on "Vivisection." This subject has been exhaustively discussed during the past few years, Dr. Gould taking no inactive part. To many the subject has become a little wearisome, but no one should fail to read Dr. Gould's paper. It is fresh, earnest and just. It is the ablest presentation of the subject we know; and no one, however strong his convictions "for" or "against," can read it without seeing a new light thrown upon the merits of his opponent's position and the unsuspected weakness of his own arguments. It is a dispassionate and thorough presentation of all the issues of the question, both immediate and deep reaching. It deserves a wide reading.

The essay upon "The Role of the Maternal Instinct in Organic Evolution" is a thoughtful setting forth of a great principle of all creative life. Under Dr. Gould's pen it becomes instinct with earnestness and tender pathos. His picture of the appeal of dumb nature's example to human consciousness for truer love and deeper earnestness of living is tenderly and finely drawn.

His words on the teaching of biology in public schools in these two essays are most timely and unanswerable: "Make young naturalists of them (the children) as soon as possible. But guard against making them mere collectors of dead animals. It is living and not dead biology that quickens the sensibilities and deepens the child's conceptions of the world. Trained scientists are better museum makers than children. *Don't let the child kill, and delude himself that that is science or biology.*"

In these days of Degeneration, Instinct Perversion and Criminal Anthropology, Dr. Gould's earnest plea and argument in "The Modern Frankenstein" give timely encouragement to all who think there is any growing power of good in this world. It is a true and earnest protest against the enervating and over-accepted belief of unresponsibility by inheritance. Why is not man equally bound to his capacity for upward progress as to his degeneracy? That he is, and that we should hold him to it, is the text of Dr. Gould's powerful lay sermon. "Pity without justice is itself a crime" is a sentence which should be blazoned in every court of justice and over the entrance

to every institution for the care of the dependent, the deficient or the criminal.

It is impossible to make mention here of other chapters in Dr. Gould's book, even though they are equally deserving of extended notice. There are hours of pleasant reading, and after-days of pregnant thoughtfulness in store for all who care for the interesting meeting-place of true science, daily life and metaphysic thought in reading these "Borderland Studies."

The mechanical work of the book is attractive and in keeping with its matter.

*The Climates and Baths of Great Britain.* Being the Report of a Committee of the Royal Medical and Chirurgical Society of London, W. M. ORD, M.D., Chairman. Vol. I. The Climates of the South of England, and the Chief Medicinal Springs of Great Britain. London: Macmillan & Co. 1895.

This extensive and carefully prepared volume is the first fruits of a resolution passed at a meeting of the Council of the Royal Medical and Chirurgical Society in May, 1889, "that a scientific committee be appointed for the purpose of investigating questions of importance in reference to the climatology and balneology of Great Britain and Ireland and to report thereon to the council from time to time."

The Committee was most admirably selected and this first volume is a model for its kind. Reports of climatic statistics are too often dry and confusing reading, and are so skeletal in nature as to give little idea of the living character of a resort for invalids. The present volume is throughout most interesting reading, even at our own distance from the places named and effects a distinct individual impression of the various places discussed. It deals chiefly with the southern coast counties of England and such springs as Bath and Buxton, Harrowgate and Llandrindod, Droitwich, Nantwich and Tunbridge Wells.

The statistics are ample and judiciously arranged, while the practical discussion of the minor details of daily manner of life necessitated or possible in the various places is given that due weight and consideration so seldom seen in reports of climate.

To the American physician it is of value as a stimulus to such efforts as will some day bring into proper recognition and better medical jurisdiction our own very varied and valuable climatic and balneologic resources.

*Physics for Students of Medicine.* By ALFRED DANIELL, M.A., LL.B., D.Sc., F.R.S.E. London and New York: Macmillan & Co. 1896.

This is a handy little volume intended for the preparation of medical students in the elementary principles of physics. We are not in favor of short cuts in scientific learning, and find that the author is of the same opinion. "No book, no mere lectures can supply this practical knowledge; and on this ground I venture to think that the subject of physics looked at from a medical point of view, ought in every case to form an experimental part of the professional curriculum."

The book is perhaps the best of its kind, for the numerous illustrations of medical application of physical principles are well calculated to awaken in a student an interest and appreciation of the importance of thorough knowledge of physical laws.

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### BATHS AND BATHING AT PUBLIC SCHOOLS.

THE report of the "Sanitary Commission of Massachusetts," which was presented to the Legislature in 1850, has been justly characterized as "the first great step in the sanitary work of our times," in the United States. The report was chiefly the work of Mr. Lemuel Shattuck, of Boston, Chairman of the Commission. "I remember Mr. Shattuck well," said Dr. Henry I. Bowditch, in his "Centennial Discourse on Public Hygiene," in 1876: "Calm in his perfect confidence in the future of preventive measures to check disease, he walked almost alone the streets of his native city, not only unsustained by the profession, but considered by most of them as an offense. . . . The public, ignorant of hygiene, treated him no better. The report fell still-born from the State printer's hands. Its recommendations were ignored."

Prominent among the more comprehensive measures urged by Lemuel Shattuck, the following may be mentioned: The establishment of a general board of health for the State; the appointment of a local board of health in every city and town; the adoption of a general and uniform system of registration of births, deaths and marriages; the taking of a decennial census, beginning with 1855; the revision of the laws relating to coroners; the control and regulation of cemeteries by boards of health. The development of public and municipal hygiene since the Massachusetts State Board of Health and Vital Statistics was established in 1869 has followed to a striking degree the lines marked out by Lemuel Shattuck in 1849.

Politicians and philanthropists now show interest and concern in conditions and measures to which only the most advanced sanitarians gave heed fifty years ago, thanks to the exigencies due to crowding and other untoward concomitants of city life. The urban population of Massachusetts, which amounted to only 11 per cent. of the whole in 1820, has increased from 17 per cent. in 1840, and 34 per cent. in 1855, to 63 per cent. in 1895. Questions which a dozen years

since were either ignored or dismissed as millenarian and academic are now considered timely and practical. Among such questions school sanitation and hygiene, public play-grounds, municipal baths and physical education have recently acquired special prominence.

It is interesting to note that measures which strike very many people, even now, as startlingly novel, were foreshadowed in the recommendations of Lemuel Shattuck's "still-born" report in 1850. For instance, that report recommends "that, in erecting school-houses, churches and other public buildings, health should be regarded in their site, structure, heating and ventilation; that measures be taken to ascertain the amount of sickness suffered among the schools and other seminaries of learning; that open spaces be reserved in cities and villages, to afford to the artisan and the poorer classes the advantages of fresh air and exercise; and that public bathing-houses and wash-houses be established in all cities and towns."

The *Boston Herald* in a recent article argues in favor of the School Committee of Boston following German example, by the experimental introduction of shower-baths into a school about to be built in the most squalid and congested section of the North End. The writer shows that, even where municipal baths are most numerous and well devised in Europe, the policy of providing special bathing facilities in school-houses for the children who resort to them for instruction has developed rapidly in the last decade and is now highly approved. The initial impulse to the wide-spread and admirable system of municipal baths now so common in Great Britain and on the Continent is ascribed by the *Herald* writer to the success which attended the establishment of Liverpool's first public bath and wash-house in 1842.

Lemuel Shattuck's principal ground for urging the establishment of public baths in Massachusetts cities in 1849 was the success attained by Liverpool, Manchester and London in the erection and management of such institutions in the period 1842-49. Pages 209-212 of the Sanitary Commission's report are devoted, in the main, to showing the nature and results of the then recent experimental establishment of municipal baths in Britain. The extract is too long for quotation here; but the advocates of municipal baths in America may find it of value, as the literature of bathing and bath-houses, in English, is not remarkable for its copiousness or freshness. The report speaks of a "Boston Bathing and Wash-house Company," which was incorporated, March 11, 1850. It would be interesting to know how long the Company lived and what it accomplished during its presumably brief existence.

The signal success of the People's Bath which was built in 1891 by the New York Association for Improving the Condition of the Poor, appears to warrant the recent appropriation of \$150,000 by the city of New York and of \$65,000 by the city of Boston for the establishment of similar institutions. That the Boston School Committee should be forced

to consider the question of school baths before even the site of the first of Boston's municipal bath-houses has been determined, bespeaks an enhanced and diversified interest in school hygiene in the community.

Fortunately the advocates of school shower-baths can point to the results of ten years' experiment by school boards in Germany and Switzerland. It would appear from the evidence cited from European experience that school shower-baths have proven popular, cheap and efficacious wherever they have been given a fair trial. They are admitted to be very much cheaper, both in respect to original cost and cost of maintenance, than any other form of bath. Being self-cleansing, school shower-baths have commended themselves to sanitarians and hygienists as superior to tub-baths. If, as is claimed by Dr. Hartwell, bathing and dressing-room appliances adequate for bathing 2,000 children weekly during school hours can be placed in the Paul Revere School at a cost of less than \$3,000, we are inclined to think that the School Board will do well to test the matter practically. It is admitted by the educational authorities that school-house air in Boston is bad. It is probably as bad in the North End as anywhere in the city. We have little doubt that the comfort, health and efficiency of teachers and pupils in the new school would be greatly enhanced, as a result of the purer air which would be had if the the bodies of the pupils who come from "unplumbed" homes were occasionally subjected to a warm shower of water during the winter months.

The natural reply of school authorities to so novel and startling a demand as that for school-baths is the familiar "*non possumus*," and to many the proposal savors unduly of paternalism. But school baths have won the day abroad in spite of these and kindred objections. We are persuaded that what foreign school boards do for the health and comfort of the school population, American school boards can do if they will.

It sounds plausible to say that free baths for school children would tend to socialism and pauperization. But in a city like Boston, which already provides free instruction, free text-books, free libraries, free parks and free swimming baths in summer, is not the danger somewhat imaginary? Would not the advantages accruing from cleanly school children offset any disadvantage likely to arise during the process of making them clean, comely and comfortable?

#### DIPHTHERIA STATISTICS AT THE HÔPITAL DES ENFANTS MALADES, PARIS.

M. SEVESTRE of the Hôpital des Enfants Malades, Paris, France, has just published the statistics of treatment during the year 1895 of all the cases of diphtheria that have been admitted to that hospital, with a strikingly favorable showing for antitoxin.

During the past year, 1,140 children entered the diphtheria "pavillon" with the probable though not

positive diagnosis of diphtheria; of these 158 died — a mortality of 13.85 per cent. If we deduct 71 cases which came to the hospital moribund, or who died within twenty-four hours, we obtain a figure of 1,069 with 87 deaths, a mortality of 8.13 per cent.

The cases of unmixed diphtheria were 392 in number, with 39 deaths — a mortality of 9.94 per cent.; or if we reckon out 23 cases which died within twenty-four hours, a mortality of 4.33 per cent. The whole number of cases of mixed diphtheria was 486, and the corresponding figures (including those entering with fair chances of recovery and those who died within a day after admission) were 12.11 per cent. and 19.34 per cent. In other words, diphtheria with mixed microbic associations gave a mortality double that of diphtheria pure.

Sevestre declares himself absolutely convinced, in opposition to the opinion of many other authorities, that the association of the streptococcus materially aggravates the prognosis of diphtheria. In diphtheria complicated with the streptococcus, Marmorek's serum may be employed, but the most that can be expected of it is a modification in the state of the throat and glands, with no very clear antitoxic action.

With regard to the accidents which have been observed to follow the use of the serum, they can hardly (Sevestre thinks) be due to the serum being spoiled through age, and he believes that a preparation may be employed without fear however old, provided that it remains clear and transparent.

All the patients at this hospital were subjected to the ordinary treatment for diphtheria, and particularly to injections of Roux's serum in the dose of 10 to 30 c. c., according to the age of the child and the gravity of the case. Generally a single injection sufficed, except in cases of croup and grave angina, in which it was often necessary to make a second and a third injection of 10 c. c., at intervals of twelve to twenty-four hours.

Apart from the injections, the little patients were subjected to lavages and douchings of the throat with Labarraque's solution (one per cent.), and nourishment and stimulants were administered.

In a certain number of cases, it was found necessary to combat laryngeal obstruction by tubage or tracheotomy. Tubage was generally practised with the short tube which is more easy to introduce and to remove, and which during its sojourn remains permeable, at least as well as the long tube does. In a few rare cases (infra-glottidean laryngitis) the long tube was preferred. The tube was kept in place three or four days, and sometimes less; at other times it was allowed to remain several weeks without any detriment. Tracheotomy was practised only in exceptional cases, and in children where tubage had been tried without success.

The total mortality of cases of croup treated medically was 14.11 per cent., or, reckoning out cases apparently hopeless on entering, 6.04 per cent. The mortality of children subjected to intubation was 27.07

per cent., or 17.73 per cent., if we deduct cases that died within twenty-four hours after intubation. The mortality of children who underwent tracheotomy after intubation was 87 per cent. of all cases, or 37 per cent. of those who survived the operation longer than twenty-four hours.

Sevestre thinks that cases of paralysis following the antitoxin treatment are quite as frequent as after other methods, but they are, as a rule, more benign. This does not precisely correspond with the experience of Netter, that "post-diphtheritic paralysis is becoming relatively uncommon since the introduction of the serum treatment," or that of Guelpa, that "what strikes one most vividly who has followed the clinics in the children's hospitals before the introduction of serotherapy and since is the rarity of complications of all kinds."

#### MEDICAL NOTES.

**AN INTERNATIONAL SURGICAL CONGRESS.** — At the twenty-fifth anniversary meeting of the German Surgical Society, at which Professor Paul Bruns of Tübingen was chosen President, it was voted to hold an International Surgical Congress in London in the year 1900, to be followed by others in France, Germany and the United States.

**DEATH OF A GERMAN NAVY SURGEON.** — Dr. Renvers, fleet-surgeon to the German Asiatic squadron, died of accidental poisoning on board the flagship *Kaiser*, in Yokohama harbor, on April 11th. In the early hours of that morning Dr. Renvers wished to take a dose of medicine, but inadvertently poured into the glass a solution of bichloride of mercury and drank it off. He at once discovered the mistake, and the stomach was emptied without delay, but without avail, as death speedily followed. — *Medical Record*.

**AN INCOME TAX ON PHYSICIANS.** — It is reported that the city of Louisville has recognized the public service of its physicians by imposing an income tax upon all physicians according to their receipts. No exception is made of those collecting less than \$2,000 as did even the unconstitutional law of two years ago. The tax for those whose income is less than \$2,000 is \$10, while the license fee rises from this to \$100 for those whose business brings them in \$10,000. The medical societies of the city have expressed their intention of testing the legality of the law in court.

**MEDICAL JOURNAL ENTERPRISE IN PARIS.** — The publishers of one of the medical papers of Paris, it is said, have hired a large shop almost opposite the School of Medicine on the Boulevard St. Germain, and transformed it into a reading-room, free to all the physicians and medical students of Paris, to each of whom a card of admission was sent. The front part of the establishment opens directly on the street, and on one side contains notices of anything which may be interesting from a medical point of view, such as courses of lectures, etc.; the other side is devoted to

the latest reports from various news agencies. In the rear of the establishment are found numerous desks, paper and ink, and a case containing several hundred medical papers from various parts of the world. The reading-room opens into a small garden where the visitor may smoke.

## BOSTON.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—During the week ending at noon, July 15, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 94, scarlet fever 15, measles 40, typhoid fever 10.

## NEW YORK.

**OPENING OF A SEASIDE HOSPITAL.**—On July 8th, the St. John's Guild's seaside hospital at New Dorp, Staten Island, was opened for the season, and the first trip of the free floating hospital of the Guild was also made. These salt-water trips, twenty-six miles long, will be made every week day until about the middle of September; the floating hospital starting on three days of the week from the East side of the city, and on the alternate days from the West side. The boat can accommodate from 1,500 to 1,600 women and children, and each trip costs about \$250, including the food provided.

**A MIDWIFE INDICTED FOR CRIMINAL NEGLECT.**—A case which it is hoped may have some effect in preventing similar crimes in the future recently came up in the Centre Street City Court. The agents of the Society for the Prevention of Cruelty to Children discovered a child one month old living in conditions of the most frightful filth and squalor, and blind from the ravages of ophthalmia neonatorum. They had the midwife who attended the mother of the child in her confinement arrested, and she was held in \$500 bail on the charge of violating Section 289 of the Penal Code in not notifying the Board of Health that the infant was born with diseased eyes. The mother, who is unmarried, was also arrested; the specific charge against her being failure to properly maintain her offspring.

**THE SUMMER MORTALITY.**—The number of deaths reported in the city during the week ending July 11th was 967, an increase of 71 over the previous week. While this is a larger mortality than has been recorded for many months, it is not at all excessive for this season, which is usually attended with about the highest death-rate of the year; the number of deaths during the second week in July sometimes reaching as high as 1,400, or even more. There were 242 deaths from diarrheal diseases, of which 228 were in children under five years of age. There were 11 deaths from whooping-cough, which is an unusually large number for that disease in one week.

**DEATH OF DR. SEXTON.**—Dr. Samuel Sexton, the distinguished aurist, died at his residence in New York on July 11th. He was born in Ohio in 1833, and graduated from the medical school of the University

of Louisville, Ky., in 1856. In 1861 he enlisted as assistant surgeon of the Eighth Regiment of Ohio Volunteers for three months, and afterwards served throughout the war in that capacity. After studying for some time abroad he took up the practice of his profession in New York City. He was one of the first to devote himself exclusively to diseases of the ear, and attained such success in his specialty that he was recognized as perhaps the leading American authority in otology and also attained an international reputation. In 1877 he received from the Venezuela Government a medal of honor in recognition of his services in the cause of public education. His lectures on Diseases of the Ear were mainly given at the New York Eye and Ear Hospital.

**DEATH OF DR. GRAY.**—Dr. William K. Gray, one of the oldest practising physicians in New Jersey, died at his residence in East Orange on July 7th. He was born at Whippany, New Jersey, and received his medical education at the College of Physicians and Surgeons, New York. He practised in the city of New York until twenty-three years ago, when he removed to East Orange. He leaves a widow, one daughter and three sons, two of whom are physicians.

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Miscellany.

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## SIR J. RUSSELL REYNOLDS AS A CONSULTANT.

IN an extended obituary of Dr. Reynolds, the *British Medical Journal*<sup>1</sup> gives the following account of his qualities as a consultant:

"He was remarkable for the courteous consideration and shrewd kindness of his manner not less than for the painstaking study which he gave to every case. He was not led by his unsurpassed experience in all forms of nervous disease or by his keen diagnostic acumen to come to a hasty decision. He seemed to have ever before him the idea that he was called not merely to make a diagnosis, much less to write a prescription, but to advise the individual patient what he or she could best do to regain health or to diminish suffering, and what changes in the environment, mental, emotional, or physical, were most likely to achieve this end. No doubt these are objects which we all have in view, but Reynolds seemed to make them the guiding principle of his practice, and the personal interest which he really felt was quickly perceived by his patients. To many of them he was something more than a 'doctor'; he was the strong guide which led them back to a clearer-sighted and calmer view of life, and its possibilities and duties.

"As a teacher and hospital physician he displayed the same qualities. His love of precision, order and classification in dealing with scientific questions, perhaps also a rooted conviction that clinical insight was only really to be gained from patient personal study of the individual, prevented him from ever seeking success as a clinical lecturer. Though far from a sceptic in matters of therapeutics, like some of his most distinguished contemporaries, he yet appeared to have an almost instinctive aversion to generalizations as to treatment. Each patient must be considered by himself and treated individually, not merely as one of a class."

<sup>1</sup> June 6, 1896.

## MEDICAL LONGEVITY.

DR. SALZMANN, of Esslingen, according to the *Lancet* of June 20th, has recently devoted his attention to determining the average duration of life of members of the medical profession in different centuries. From an extensive study of old archives he has concluded that the average duration of a medical man's life during the sixteenth century was thirty-six years, five months; in the seventeenth century it was forty-five years, eight months; in the eighteenth century forty-nine years, eight months; and in the nineteenth century fifty-six years, seven months. It would appear from these data that the duration of medical life has been increasing in a marvellous manner. According to Dr. Salzmann the addition of over twenty years to the average medical lifetime is due to the advance of medical science, preventive and curative; so the ironical apophthegm, "Physician, heal thyself," can no longer be launched with any effect. In a speech delivered some time ago the present leader of the House of Commons alluded to the possibility of normal human life becoming extended "to the patriarchal term of 120 years." A fearful prospect truly in these days of rapid living when some men (having exhausted life's possibilities) look upon themselves as Struldburghs at forty.

## BICYCLE RIDING FOR THE UNSOUND.

IN the series of special reports upon bicycling by Mr. E. B. Turner, in the *British Medical Journal*,<sup>1</sup> there is a most excellent summing up of the limits of proper use of the wheel by persons who have any imperfections of the circulatory system.

With regard to valvular lesions he rightly says that no person suffering from aortic lesions should be allowed to ride at all. The risk of serious damage following any sudden strain is too great to be incurred.

With regard to uncomplicated mitral disease, experience teaches that in a large number of cases actual benefit has resulted from a mild course of cycling exercise.

In giving advice on this matter, the fact must always be borne in mind, that the force necessary to propel the weight of the body on wheels is very much less than that which is required to carry it on its own legs; and that to ride four miles on a cycle is a far smaller tax on the circulatory and muscular systems than to walk one. If a sufferer from mitral incompetence in its early stages be allowed and encouraged to take gentle and regular exercise on either a bicycle or light tricycle, he will maintain his general health in better condition, and at the same time give the heart muscle that amount of work which is necessary to prevent degeneration of its tissue, and thus retard dilatation of the cardiac cavities. It must, of course, be a rigid law in such cases that no hills be ridden under any circumstances and no speed attempted. Breathlessness must never be produced, and no ride attempted during digestion. . . . With respect to tricuspid mischief, no actual experience has been put on record, but it appears theoretically the wiser course not to experiment, but to carry on the treatment on the old lines. It is superfluous to point out that where aneurism exists or when symptoms of angina are present, the bicycle must be "tabu," and that if the arteries show signs of atheroma, the greatest caution must be inculcated, and in all cases of doubt the exercise forbidden.

A weak heart-muscle *per se* is not an absolute bar to riding and if the weakness depend on a state of want of "tone," and general "flabbiness," it may be much improved by the

judicious use of the wheel. If a condition of fatty degeneration be detected, or if the cavities of the heart are dilated, and their walls thinned, it stands to reason that nothing but harm can ensue from attempting a new and unaccustomed form of exertion.

Of particular interest to many will be the observations upon impaired venous circulation:

Ordinary varix of the lower limbs, however produced, is very frequently much benefited by regular cycling, but if the enlarged veins be of considerable size, a stocking should be worn. Out of a very large number of such cases the writer has never seen the slightest increase which could be put down to riding, not even in men who raced long distances on the road and path, while in many cases of infiltration of the skin and varicose eczema, a perfect cure has resulted. A suspender should always be used if the rider has a varicocele, as a protection from injury by the saddle, when the roads are rough and lumpy. Piles diminish and cease from bleeding in a wonderful fashion by the time a few hundred miles have been judiciously covered, and though, of course, external masses must remain, they do not as a rule increase.

## A WINTER DIET IN FRANZ-JOSEF LAND.

In a paper upon the avoidance of scurvy in Arctic regions, Dr. William Neale gives an interesting account<sup>1</sup> of the routine diet of a ship's crew while imprisoned in the ice in Franz-Josef Land. Their vessel was caught in pack ice and lost, giving the men but a short time to rescue a few of their belongings, and enough food to last about six or eight weeks.

"We lost our ship on August 21, 1881, leaving a crew of twenty-five all told, that had to be fed and kept in health for at least twelve months before any help could reach us from the outside world.

"Fortunately, we were only two miles from shore when the ship went down; our first work was to convey everything we had saved to land. Here we soon built a hut of stones and turf, covering it over with a canvas roof; in this canvas roof I made several ventilators with old meat tins, so that no foul air could collect. This is a point of vital importance as regards the health of a crew during the long dark winter.

"The next thing to be done was to hunt for food. This we managed to obtain in fairly good quantity, so that before the winter set in we had killed several bears and walrus besides some hundred birds. During the year we ate 36 polar bears, 29 walrus and about 2,000 birds.

"Whenever an animal was shot we collected as much blood as possible in tins or pails; this became a solid mass in a few minutes. I tried to allow one pound of frozen blood in the soup every day. We saved very little flour, a few tins of preserved vegetables and condensed milk, also about 20 gallons of rum.

"Within three weeks of losing the ship we had settled down in our hut, and the following daily routine was established:

"At 8 A. M. we had breakfast. This consisted of bear and walrus meat, chopped up and boiled for four hours with about two gallons of water, so that we had half-a-pint of soup and about two table-spoonfuls of minced meat for each man; we also had half-a-pint of weak tea per man, colored with a little condensed milk. During the morning as many as liked went for a walk or worked in the hut, but when there was any wind we were obliged to stay indoors, as our clothing was only the ordinary clothes worn during the summer on an Arctic voyage.

"At noon we had dinner. This consisted of about twice as much meat as at breakfast, with a pound of frozen blood in the soup and from two to four pounds of tinned potatoes,

<sup>1</sup> June 20, 1896.

<sup>1</sup> Practitioner, June, 1896.

which only lasted from September to March; also a small 'doughboy' (as the sailors called it) for each man, made of flour and water, about the size of a small orange; after March we had to go without this luxury. We had no biscuit all the winter.

"At 4 P. M. we had grog. This consisted of twelve ounces of rum and twelve of water, so that each man had one ounce of the mixture, Mr. Leigh Smith having a glass of Burgundy, as a rule, instead of rum.

"At 5.30 P. M. we had tea, a similar meal to breakfast, and at 8 P. M. all turned in except two men who were on watch all night, and who were occupied in melting snow for the next day's cooking.

"In this way twenty-five of us lived for ten months in the hut, the temperature of which was never above freezing point, and which was more or less filled with smoke from our fire, which was kept going by soaking rope-yarns in a large tin dish with oil obtained from the fat of the animals we killed. The following summer we started in four open boats, and in forty-three days worked our way to Nova Zembla, where we were picked up by Sir Allen Young, who had been sent from England to look for us. When we met him we were all in perfect health, except one man who had epithelioma of the lip, and who died after we reached Scotland."

### HISTORY OF YELLOW FEVER IN RIO DE JANEIRO.

DR. CLEARY of the United States Marine-Hospital Service has made the following interesting summary report of the history of yellow fever, in Rio de Janeiro.<sup>1</sup>

Yellow fever made its first appearance in Rio de Janeiro in the last days of the month of December, 1849, having been brought by an American ship to Bahia, and thence to this port. Being a new and almost unknown disease, it rapidly extended itself amongst the shipping and throughout the town, and as it found a favorable soil for its propagation, it made many victims and became almost endemic in the place, whose population at that time was, more or less, 200,000. It made 4,160 victims in the year 1850, its propagation being favored by the situation of the town on the low, flat margins of an immense bay, fed with fresh marsh water, and with only one small outlet, so that it is safe to say that thousands of acres of surface have stagnant water; and at that time modern sanitary science was not as well understood as at present. Besides, there was no drainage system, nor any method to get rid of garbage and fecal matter, except by carrying it in carts and on the heads of negroes to the beach of the bay, where it was cast into the water to powerfully aid in increasing the putrescent matter already contained in the still waters which almost surround the town. Under such circumstances it at once obtained a fixed status.

In 1851 there were 471 deaths from the disease, and in 1852 there were 1,948. I have no information for the years 1853 and 1854, but from 1855 to 1859 there were 2,725 deaths. In 1860 there were 1,236 deaths; in 1861, 247; in 1862, 12 deaths; in 1863, 15, and to the end of 1868 there were no more cases reported.

This immunity may, perhaps, be attributed to the great system of drainage commenced soon after 1860; but at the commencement of these works they doubtless contributed to the extension of the disease by opening up the streets in every direction, but as soon as they could carry off immense amounts of deleterious matter a better condition ensued. Now, after many years, the works are considered inefficient, if not positively deleterious, as the pipes and galleries are made of very porous materials and admit of the escape of poisonous matter sufficient to contaminate the subsoil, and as street excavations are constantly being made, exhalations from this poisoned earth are of daily occurrence.

In the year 1868 it is believed that the disease was re-

imported (and by another American ship), and up to the end of 1869 there were 293 deaths from yellow fever.

From 1870 to 1874 yellow fever killed 5,922 persons; in 1873 alone there were 3,659 deaths.

From 1875 to 1879 the disease increased in intensity and killed 7,218 victims, including the great epidemic of 1876, in which year 3,476 persons died from this fell disease.

From 1880 to 1889 there were 9,563 deaths from yellow fever. In 1890 there were only 719 deaths, whilst 1891 had 4,454 victims and 1892 4,312. At this time the population was estimated at 566,800, and the death-rate was 33.5 per 1,000.

In 1893 the disease victimized only 742, whilst in 1894, 4,715 died of the disease, the greatest number yet in any one year, due perhaps to the fact of the town being blockaded and the garbage not having a free exit. In 1895 the number fell again to 818. In the present year of 1896 we have another epidemic, but it will not be as great as in several of the former years.

The above is a sad picture, and I hope something may be done toward stamping out the pest, or at least for its amelioration, but I doubt it, for every year, after the evil is done, the newspapers, the authorities, everybody, cry out against the bad sanitary and quarantine arrangements, and threaten to bring about great reforms, but as yet no real great improvement has been effected, and the evil remains without remedy.

More effective drainage, more effective disinfection, more effective isolation, better habitations for the lowest class, a better supply of filtered water, and cleaner streets are all absolutely necessary.

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 4, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping cough.	Diphtheria and croup.	
New York . .	1,892,332	896	472	28.93	9.79	19.91	.99	4.81	
Chicago . .	1,678,967	547	302	20.88	7.56	15.66	8.76	2.88	
Philadelphia . .	1,164,000	—	—	—	—	—	—	—	
Brooklyn . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . .	560,000	—	—	—	—	—	—	—	
Boston . .	491,205	193	66	16.4	9.88	7.28	—	5.20	
Baltimore . .	496,315	241	132	39.36	7.79	34.44	2.87	.41	
Cincinnati . .	336,000	116	55	16.34	12.04	11.18	—	5.16	
Cleveland . .	314,537	132	77	21.75	2.25	12.72	.75	.75	
Washington . .	275,500	153	91	5.20	31.86	—	.66	1.96	
Pittsburg . .	238,617	—	—	—	—	—	—	—	
Milwaukee . .	265,000	—	—	—	—	—	—	—	
Nashville . .	87,754	42	18	9.52	16.66	7.14	—	—	
Charleston . .	65,165	—	—	—	—	—	—	—	
Portland . .	40,000	—	—	—	—	—	—	—	
Worcester . .	98,687	27	13	66.66	11.11	18.50	—	—	
Fall River . .	88,020	78	62	85.72	7.12	78.32	—	3.84	
Lowell . .	54,359	50	35	64.00	—	44.00	6.00	—	
Cambridge . .	51,519	22	9	41.60	4.16	29.12	—	12.48	
Lynn . .	62,355	—	—	—	—	—	—	—	
New Bedford . .	55,254	16	7	18.75	12.50	12.50	—	—	
Springfield . .	51,534	11	3	18.18	9.09	18.18	—	6.25	
Lawrence . .	52,153	—	—	—	—	—	—	—	
Holyoke . .	40,149	—	—	—	—	—	—	—	
Salem . .	34,437	12	3	25.00	—	16.66	—	8.33	
Brookton . .	33,187	—	—	—	—	—	—	—	
Haverhill . .	30,185	16	—	30.25	—	18.75	—	—	
Malden . .	29,706	4	2	25.00	—	—	—	25.00	
Chelsea . .	31,285	12	3	8.33	8.33	—	8.33	—	
Fitchburg . .	26,394	6	2	16.66	—	—	—	—	
Newton . .	27,122	—	—	—	—	—	—	—	
Gloucester . .	27,663	—	—	—	—	—	—	—	
Taunton . .	27,093	5	1	—	—	—	—	—	
Waltham . .	20,877	9	3	11.11	22.22	11.11	—	—	
Quincy . .	20,712	—	—	—	—	—	—	—	
Pittsfield . .	20,447	2	1	50.00	—	50.00	—	—	
Everett . .	18,578	6	3	—	—	—	—	—	
Northampton . .	16,738	—	—	—	—	—	—	—	
Newburyport . .	14,564	7	3	14.28	—	—	—	14.28	
Amesbury . .	10,920	—	—	—	—	—	—	—	

Deaths reported 2,713; under five years of age 1,430; principal infectious diseases (small-pox, measles, diphtheria and

<sup>1</sup> Public Health Reports, June 12th.



croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 692, consumption 223, acute lung diseases 196, diphtheria and croup 86, whooping-cough 30, typhoid fever 16, scarlet fever 15, measles 13, cerebro-spinal meningitis 11, erysipelas 8, malarial fever 3.

From scarlet fever New York 9, Boston 4, Chicago and Fall River 1 each. From measles New York 11, Boston 2. From cerebro-spinal meningitis Washington 4, New York and Baltimore 3 each, Worcester 1. From erysipelas New York 4, Lowell 2, Baltimore and Boston 1 each. From malarial fever New York 2, Nashville 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending June 27th, the death-rate was 16.9. Deaths reported, 3,513; acute diseases of the respiratory organs (London) 153, diarrhea 228, measles 166, whooping-cough 114, diphtheria 59, scarlet fever 43, small-pox (London) 1.

The death-rates ranged from 22.3 in Liverpool to 8.6 in Norwich: Birmingham 20.2, Bradford 13.2, Bristol 17.4, Croydon 13.3, Gateshead 15.9, Hull 17.2, Leeds 20.3, Leicester 16.3, London 16.2, Manchester 20.1, Newcastle-on-Tyne 16.2, Nottingham 16.3, Plymouth 14.4, Portsmouth 12.0, Sheffield 16.2, Swansea 12.7.

### METEOROLOGICAL RECORD

For the week ending July 4th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. •		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.		
S...28	29.69	70	78	62	78	91	84	S.W.	S.W.	12	6	O.	.04
M...29	29.80	71	81	61	86	64	75	W.	W.	14	12	C.	
T...30	30.16	66	76	56	83	49	56	N.	S.W.	9	12	C.	
W...1	30.18	74	88	61	56	56	56	S.W.	S.W.	12	9	C.	
T...2	30.10	77	88	68	67	78	72	S.W.	S.W.	13	7	F.	
F...3	30.14	71	83	59	66	78	72	W.	E.	5	7	C.	
S...4	30.06	60	62	57	97	99	98	N.E.	N.E.	5	7	C.	

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ———— Mean for week.

### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 11, 1896.

J. C. WISE, medical inspector, detached from the Washington Navy Yard and ordered as a member of the Board of Inspection and Survey, July 15th.

R. A. MARMION, medical inspector, detached from the Board of Inspection and Survey, July 15th, and ordered to the Washington Navy Yard.

S. S. WHITE, passed assistant surgeon, detached from the Naval Academy and ordered to the "Thetis."

G. A. LUNG, passed assistant surgeon, detached from the "Thetis," ordered home and granted two months' leave.

P. A. LOVERING, surgeon, detached from the New York Naval Hospital and ordered to the "Oregon."

C. H. T. LOWNDES, passed assistant surgeon, detached from the Washington Navy Yard and ordered to the Naval Hospital at Philadelphia.

C. U. GRAYATT, surgeon, to Norfolk with draft of men and then home and three months' leave.

R. G. BRODRICK, assistant surgeon, to the "Franklin."

### APPOINTMENTS.

The following changes and appointments have been recently made in the staff of the Boston Dispensary:

Surgeon, DR. WARREN F. GAY; Surgeon to Genito-Urinary Department, DR. HOWARD A. LOTHPROP; Surgeon to Orthopedic Department, DR. CHARLES F. PAINTER; Surgeon to Department of Diseases of the Ear, DR. EDGAR M. HOLMES, and District Physicians, DRS. CHAS. H. HARE, J. N. COOLIDGE, FRANK A. HIGGINS and JAMES S. STONE.

### RECENT DEATHS.

JOHN MILNE MACKENZIE, M.D., M.M.S.S., died in Fall River, July 11th, aged forty-one years. He was a graduate of Brown University in 1876 and of the Harvard Medical School in 1890.

WILLIAM CHOLMELEY, M.D. St. Andrews, F.R.C.P., died in London recently, aged seventy-three years. He received his medical training at St. Bartholomew's Hospital and was for many years on the staff of the Great Northern Hospital. He was for ten years, from 1873 to 1883, editor of the *Medical Times and Gazette*.

### BOOKS AND PAMPHLETS RECEIVED.

Indio, The Colorado Desert for Health. Walter Ludley, M.D. Reprint.

Albany Medical College Catalogue, 1895-96 and Announcement, 1896-97.

Ninth Annual Report of St. Margaret's Hospital, Kansas City, Kansas. 1896.

Syphilis of the Vital Organs. By Henry Alfred Robbins, M.D., of Washington, D. C.

Preliminary Report on Stafford Mineral Spring near Vossburg, Miss. By W. S. Rowley, M.D.

Upsala Läkareförenings Förhandlingar Trettionde Baudet. Första-Attonde Käptena. Upsala. 1896.

Transactions of the Chicago Pathological Society from October, 1894, to November, 1895. Vol. I. Chicago. 1896.

Transactions of the American Association of Obstetricians and Gynecologists, Vol. VIII for the year 1895. Philadelphia. 1896.

Statistica Sanitaria dell'Armata per Gli Anni 1893 e 1894. Ministeria della Marina, Direzione del Servizio Sanitario. Roma. 1896.

Formulaire Aide-Memoire de la Faculté de Médecine et des Médecines des Hôpitaux de Paris. Dr. Fernand Roux. Paris. 1896.

Thirty-fifth Annual Report of the Cincinnati Hospital for the year ending December 31, 1895. Frank W. Hendley, M.D., Superintendent.

Burdett's Hospitals and Charities, 1896. Being the Year-Book on Philanthropy. By Henry C. Burdett. London: The Scientific Press. 1896.

Sterility. By Robert Bell, M.D., F.F.P.S.G., Senior Physician to the Glasgow Hospital for Diseases Peculiar to Women. London: J. & A. Churchill. 1896.

A Hot Operating Table and Its Advantages. The Mechanism and Diagnosis of Traumatic Cerebral Lesions. By John W. Perkins, M.D. of Kansas City, Mo. 1895-96.

Medical and Surgical Reports of the Boston City Hospital, Seventh Series. Edited by George B. Shattuck, M.D., W. T. Councilman, M.D., and Herbert L. Burrell, M.D. Boston: Published by the Trustees. 1896.

Traitement des Maladies des Femmes par l'Electricité. Par Régulier (L-R). Précédé d'une préface par le Dr. Labadie Lagrave. Volume en 8<sup>e</sup> de ix, 303 pages, avec 32 figures. Publications du *Progres Medical*. Paris.

Antropometria Militare. Risultati ottenuti dallo spoglio dei fogli Sanitarii dei Militari delle classi 1859-68, eseguiti dall'ispettorato di sanità militare. Incaricato della disegione dei lavori Dr. Ridolfo Livi. Parte I. Roma, 1896.

Affections Chirurgicales du Tronc (Rachis, Thorax, Abdomen, Bassin). Par le Dr. Polaillon, Chirurgien de l'Hôtel Dieu, Professeur agrégé à la Faculté de Médecine de Paris, etc. Statistique et Observations de Chirurgie Hospitalière, Fascicule III. Octave Doin, Paris.

Twentieth Century Practice; An International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Volume V. Diseases of the Skin. New York: William Wood & Co. 1896.

The Treatment of Phthisis. By Arthur Ransome, M.D., M.A. (Cantab.), F.R.S., Consulting Physician to the Manchester Hospital for Consumption and Diseases of the Chest and Throat; Examiner in Sanitary Science at Cambridge and Victoria Universities. London: Smith, Elder & Co. 1896.

Diagnosis and Treatment of Diseases of the Rectum, Anus and Contiguous Textures, designed for Practitioners and Students. By S. G. Grant, M.D., Professor of Diseases of the Rectum and Anus, University and Woman's Medical Colleges, Kansas City, etc. With two chapters on Cancer and Colotomy. By Herbert William Allingham, F.R.C.S. Eng., Surgeon to the Great Northern Hospital; Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum, etc., London. Illustrated with 15 full-page chromo lithographic plates and 115 wood engravings in the text. Philadelphia: The F. A. Davis Co. 1896.

## Original Articles.

INTRA-UTERINE INFECTION OF SYPHILIS.<sup>1</sup>

BY ARNER POST, M.D.

As one of the possible methods of transmission of syphilis to the fetus must be mentioned the inoculation with syphilis of a pregnant woman who was free from the disease at the time of conception. This is spoken of as placental or intra-uterine infection, or as regards both mother and child as post-conceptual syphilis.

Disease is hereditary in a strictly medical sense only when it is pre-existent in the parents at the time of conception. If a healthy pregnant woman during the course of her pregnancy contracts syphilis and transmits it to her unborn child, that is intra-uterine infection or contagion of syphilis, and not hereditary syphilis, though the distinction is seldom observed in speaking of the children.

In regard to the possibility of intra-uterine infection of syphilis two opinions prevail—one party affirming and another denying its existence; while a third party may be said to consist of those who admit its possibility up to a certain period of pregnancy and deny its possibility after a date which is set at various periods by different writers. Those who deny the possibility of such transmission rest their belief upon the well-known relationship between mother and fetus which does not permit the direct interchange of blood-corpuscles and upon the probable fact that the contagium of syphilis is carried only by the blood-corpuscles and not by the serum; so that theoretically the transmission of the disease through the placenta is impossible. On the other hand those who believe in post-conceptual transmission rely upon clinical observations, which observations the non-believers consider to be faulty and untrustworthy, because opposed to the physiological facts already mentioned. I have found it of interest to collate the opinions of American authors of this Association during the past year.

Diday, whose "Treatise on Syphilis in New Born Children and Infants at the Breast" was translated into English and published by the Sydenham Society about 1858, wrote at that time as follows: "I had collected a certain number of instances of fetal syphilis resulting from an infection communicated to the mother anteriorly to conception, but as no one now doubts the fact it seemed entirely superfluous to swell my works with these proofs." He then goes on to say: "Another question in reference to this subject is of more direct practical interest; up to what period of pregnancy can syphilis then first contracted by the mother be communicated to the fetus? In other words, is there a period of pregnancy after which syphilis contracted by the mother can no longer be transmitted to the fetus?"

Sturgis, who edited a republication of Diday, makes no comment on this particular portion of the book. In his article on Hereditary Syphilis in "Morrison's Encyclopædia," Sturgis treats, with some fulness, of post-conceptual syphilis in a way that leads one to infer that he believes in its possibility, though he fails to express fully his own opinion so far as I can make out.

Keyes, quoting from Diday, says, "Syphilis may be

inherited from a mother if she becomes infected during gestation, up to the seventh month; after which time the child escapes."

Hyde and Montgomery, in a book recently issued give the following: "The period of pregnancy beyond which the mother cannot, if infected, transmit her disease to her unborn child is not fixed. It is probable that with different patients the period changes, the differences being due to the general health of the mother and to her aptitude or inaptitude for furnishing favorable ground for the action of the toxins of the disease. After the sixth month, if the mother be infected there is risk to the fetus."

In "Otis on Syphilis" I find nothing on the subject, nor in Cornil as edited by Simes and White. In the article on Syphilis in "Keating's Encyclopædia of the Diseases of Children," Post says: "It must seem that while the placenta is normally a filter which prevents the passage of the syphilitic germ, either from mother to child or from child to mother, under the influence of disease it occasionally loses its control and allows intra-uterine infection."

Culver and Hayden say: "The syphilis of the mother acquired during pregnancy *cannot* be conveyed to the fetus through the utero-placental circulation. The mother *cannot* be infected by a syphilitic fetus through the utero-placental circulation." Their manual was published in 1891, and was intended to express our existing knowledge in the smallest possible space.

In the edition of Bumstead of 1883, revised and rewritten by R. W. Taylor, is quite a lengthy discussion of the subject, which concludes as follows: "We reach the conclusion, based upon the physiological reasons already given and upon the fact that satisfactory evidence to the contrary does not exist, that the syphilis of the mother, acquired during pregnancy, cannot be conveyed to the fetus through the utero-placental circulation."

In his latest book [1896] Taylor reiterates the same belief and criticises the reported cases, but admits that "full infection may in *rare* cases occur when the filtrative power of the placenta has been impaired by morbid changes."

Modern text-books on midwifery in use in our medical schools differ very decidedly in their teaching. Thus Winkel writes: "If a pregnant woman becomes diseased at least four weeks before the birth, the fetus can become infected and be born diseased; and if the poison is first introduced *after* the fourth month of pregnancy the danger of interrupting the pregnancy is much smaller."

Schroeder writes: "If the mother is healthy at the time of conception and first infected during the pregnancy, the children will be born normal and remain healthy. The infection of a child before the birth is the *greatest rarity*."

The opinion of Lusk seems to be contained in the following sentence: "Provided the mother were untainted at the time of conception, syphilis contracted by her during pregnancy is rarely communicated to the fetus." He gives a foot-note, however, to the following effect: "Professor McLane, of this city, has reported to me the history of a well-observed case, where error was hardly possible, in which the mother, previously healthy, was infected in the fourth month, and gave birth in the ninth month to a dead child with well-marked syphilitic lesions."

<sup>1</sup> Read before the American Genito-Urinary Association, June 8, 1895.

In the "American Text-Book of Obstetrics" occurs the following: "If a mother who is healthy becomes infected during pregnancy, the child may escape if this infection takes place in the last month, unless the child becomes infected at birth or while nursing. Prognosis: The earlier in pregnancy infection of the mother takes place, the more likely is the fetus to die. If the infection occurs during the first three months and is not subjected to treatment, the fetal mortality during the first few days after delivery reaches 100 per cent. The prognosis is a trifle better if infection occurs during the fourth or the fifth month [Étienne]."

One thing is quite noticeable in the opinions of these various writers. No one of them expresses an opinion based on his own experience. All appear to speak from authority or to *reason* from anatomical facts. A desire to reconcile these different opinions must be my excuse for this somewhat lengthy study of the subject.

We are in the habit of turning to the pathological laboratory for aid in such questions on other medical subjects. Unfortunately the only aid we can receive from comparative pathology in this general discussion is in the deductions from other diseases. The transmission of other diseases from mother to fetus has been studied with great care by many observers, and among them Wolff<sup>2</sup> of Berlin, whose paper I shall make use of in considering the subject.

The problem of infection of the fetus during intra-uterine life simplifies itself into the question whether pathogenic microbes may be transferred from the mother to the fetus or not. One cannot conclude from the behavior of one pathogenic microbe that all others will behave in the same way. The different species of micro-organisms may differ from each other in reference to their transference from mother to fetus as in so many other peculiarities. The different species of animals may differ as to transmission. Still the study of analogous disease is fruitful. Among the first observations that involve bacteriology Brauell reports a mare, five months pregnant, that died of anthrax. Inoculation with the mother's blood induced anthrax in other animals; inoculation with the blood of the fetus, however, was without result. He then inoculated three gravid sheep with anthrax, who died with the disease. Inoculation with the blood from the liver of these three fetuses was also without result, and he came to the following conclusion: "That embryos from animals dead from anthrax show on examination no changes due to anthrax. Even the blood is not abnormal. In cases observed by me anthrax is not communicated from the mother animal to the fetus and the negative results of inoculation with the fetal blood coincide with this conclusion."

Nine years after Brauell's paper Davaine, without knowledge of Brauell's experiments, reported similar ones. Davaine concluded that the placenta acted as a filter through which the anthrax bacillæ could not penetrate.

Strauss and Chamberlain, by a similar series of experiments, reached a similar conclusion, and in addition, culture of the fetal fluids remained sterile in their first series of experiments as reported November 11, 1882.<sup>3</sup> But five weeks later they reported directly opposite results, and they concluded that the placenta

did not present an impossible barrier to the passage of bacteria; that in a large number of cases the blood of the fetuses of mothers dead with anthrax (charbon) contains bacteria and is virulent. That the law of Brauell-Davaine generalized an exception and is erroneous. These last conclusions were based on the successful cultivation of the fetal blood.

Two years later Koubassoff, working also in Pasteur's laboratory, instituted another set of experiments, to some degree, at least, under the control of Pasteur himself. Koubassoff limited himself to the microscopical examination of the fetal organs. He inoculated five pregnant guinea-pigs with anthrax. From them he obtained seventeen fetuses. In all these seventeen fetuses without exception he found the charbon bacillus. He also experimented with tubercle, malignant edema, and swine erysipelas (*Schweinerotlaufes*), and with few exceptions found their respective bacilli in the fetuses.

In the hope of settling these two opposed conclusions Professor Wolff of Berlin undertook a series of experiments, uniting in each case all the methods of research used by these different experimenters, and using the most minute precautions to prevent contact of the fetus with the surrounding maternal parts. We are concerned only with his conclusions.

Wolff is of the opinion that only those cases in which all three methods of research (microscopic, cultivation, inoculation) agree, give an entirely reliable testimony either for or against fetal infection. In 24 cases all three methods of research were employed; 18 of the 24 fetuses showed themselves perfectly free of anthrax by all these methods. Of the six cases, in only one was the positive result found in both culture and inoculation. In none were all three methods positive. The cases in which positive evidence of intra-uterine infection was found were exceptional and not confirmed by control experiments.

When in the cases under consideration anthrax bacilli are found in the fetus, the case is an especial one which demands the most careful investigation of the placental and general conditions which have rendered possible the usually impossible transference of bacilli from mother to intra uterine fetus.

Wolff further studied the reported cases in which small-pox occurred in pregnant women. In this series of cases the overwhelming majority are negative, that is, the child born of a mother with small-pox showed no signs of the disease. In a small number of cases, however, the child is said to have been born with evidence of the disease. These latter cases, Wolff says, cannot be thrown aside as errors of observation, and it seems that it must be admitted that small-pox is occasionally transmitted from the mother to the fetus — non-transmission the rule, transmission the exception. It is worthy of note that the clinical evidence of such transmission in small-pox was convincing to an experimenter who did not obtain evidence of fetal infection in the laboratory.

Wolff advances an explanation for these exceptions as follows: There are few infectious diseases that give rise to hemorrhages so often as variola. Such hemorrhages occur more often in females, and in females quite often from the genital organs. Such hemorrhages may give rise to communication between the maternal and fetal portions of the placenta and in that way cause the communication of natural variola to the fetus.

<sup>1</sup> Ueber Vererbung von Infectionen Krankheiten (aus den pathologischen Institut zu Berlin), von Prof. Max Wolff in Berlin, Virchow's Archiv, Band cxli, s. 136.

<sup>2</sup> Comp. rend. de la Soc. de Biologie, sèssion vom 11, November, 1882.

Since that date the subject has been constantly studied by various pathologists, and at the present time it is safe to say that the microbes of the following diseases pass the placenta to attack the fetus *in utero*: anthrax, glanders, pneumonia, typhoid, tuberculosis and the bacterium coli communis.

From one of the latest of the bacteriological journals may be quoted the following cases:

Calabrese<sup>4</sup> describes an interesting case of tuberculosis of the placenta, with transference of the infection to the fetus in a guinea-pig in which after subcutaneous injection of tuberculosis an outbreak of diffuse miliary tuberculosis had developed. Through a watery emulsion of the intestines of the one fetus the infection was transferred to other guinea-pigs.

Two other observers, Chambrelent and Sabrazès,<sup>5</sup> injected a pregnant rabbit with a culture of bacterium coli communis. The animal died after twenty hours. Bacteria colonies were found in the placenta and in the kidneys of the fetus.

This passage of micro-organisms to the fetus is due in many cases, where the placenta has been examined, to the presence of anatomical lesions, in the form of slight hemorrhages which bring the mother's blood in direct contact with that of the fetus.<sup>6</sup> Other methods of transmission can be imagined, as through the lymphatics of the cord.

There is no attempt made here to give proper credit to the various workers in this field, but rather to show that the subject has been studied for a long time with great care by many observers who have not always reached the same conclusion; that the evidence in favor of placental transmission of infectious disease is accumulating, and that in certain cases a physical explanation has been found.

In addition, clinical observation shows that exceptionally in small-pox the child born of a mother who has had small-pox during her pregnancy does show signs that the disease has passed through the placenta and reached the fetus. We are justified in saying that the microbes of other diseases do pass the placenta to infect the fetus, and hence we may infer that intra-uterine infection is *not impossible* in syphilis.

To establish the fact that a mother has acquired syphilis during pregnancy and transmitted it to her fetus, Taylor (in the edition of 1883 from which I have already quoted his positive denial of the possibility of placental transmission) laid down a series of requirements which must be observed before such transmission could be accepted:

(1) It must be shown that the father was free from syphilis at the time of conception.

(2) The infection of the mother during pregnancy, and her freedom from disease previously, must be proved beyond doubt.

(3) The child must have unmistakable syphilitic lesions acquired without doubt before birth.

These requirements of Taylor, as he puts them, are practically equivalent to proving a negative; but let us see how near we can come to establishing a case to meet these requisites. First let us remember the following self-evident truths:

(1) If the father acquires syphilis after conception, he was free before.

(2) If the mother acquires syphilis after conception, she was free before.

(3) General syphilitic lesions in the baby shown in the first month were acquired before birth.

CASE I. Mrs. — was sent to me by Dr. K., November 15th. She was the daughter of a family in which he was considered the family physician, so that he had known her for years and had watched her growth from youth up to the married state. She had come to him on November 7th with sores on the vulva, which she had seen first a few days previous. When I saw her there were three sores on the labia, the nature of which I could not at first determine. She was in her first pregnancy; having menstruated last April 7th, she was in her seventh month. Her husband accused her of giving him "a disease." The lesions on her labia remained indolent; they did not spread or multiply; and shortly before her confinement, which took place on January 7th, she broke out with a general papular eruption which made the diagnosis of syphilis absolute. If I am able to recognize the disease at all, she had primary syphilitic sores, which were followed after the appropriate period of secondary incubation by a secondary eruption.

The baby was at birth quite free from any lesions, but at the end of a week he was covered with a general syphilitic maculo-papular eruption. He soon lost weight and strength, developed the snuffles, cried night and day, and seemed likely to die.

On the evening when the baby seemed sickest the father, whom I had never seen before, sought me at my office; not finding me there, he followed me to the house of another patient and interviewed me in the hall-way. He confessed that he was the guilty party, had first acquired the disease himself during her pregnancy, and then given it to his wife; and he urged me to do everything in my power to save the baby. Had he found me at my office, I should have examined him. Under mercury the baby improved very rapidly, and was soon transformed into an apparently healthy child. The disease in the mother was more obstinate, and I shall return to her case later.

To recapitulate the facts in this case, which I consider of the greatest importance. These facts were observed throughout by two of us. The previous good health of the wife was known. The primary sores were seen at the seventh month of the mother's pregnancy. The secondary eruption occurred at about the average time for the appearance, and was in full bloom at the time of delivery, two months later. In other words, the evolution of the disease was regular. The child was born apparently healthy, or at least without skin lesions; but perfectly characteristic eruption with accompanying snuffles showed itself at the end of a week (a period so short as to show that the child was born with the disease; he could not have acquired it). The father himself accused his wife of having given him the disease when she first showed her local lesions, but afterwards confessed that he had caught the disease outside of marital relations and transmitted it to his wife. Is there a link lacking to render the evidence complete? The only point where the evidence can be assailed is the failure to examine the father as to the truth of his story; but his attempt to accuse his wife, and subsequently, when his child was apparently failing, admitting his expos-

<sup>4</sup> Calabrese, A.; *Giornale internazionale di sc. med.*, 1893, p. 761.

<sup>5</sup> Le Mercedi Médical, 1893, Nos. 12 and 13, s. 294.

<sup>6</sup> Malvoz.

ure and his disease and his inoculation of his wife, in the hopes that such confession might aid in saving his child, seems to me, who knew the parties, conclusive.

In May, four months after the birth of the child, the family left Boston for a western city. There the wife was attacked with severe pain in the right temple accompanied by drowsiness, as reported in a letter from her husband. Her trouble was attributed to disease of the ovaries, but treatment brought no relief. She was taken to northern New England, where her condition grew more serious and her face was paralyzed. She had also skipped one menstrual period.

I was consulted by letter, and expressed the opinion that her syphilis was the cause of the trouble and that the doctor ought not to be kept in ignorance of her history. They returned to Boston, and some six months after the last letter she was delivered of a six or seven months' fetus, which was macerated.

The premature labor and macerated fetus in the second pregnancy are worthy of note. The first child became syphilitic in my belief about the seventh month of intra-uterine life, and though severely affected, lived; the second was syphilitic *ab initio*, both its parents being syphilitic at the time of conception, and was so profoundly affected that it died before completing the period of intra-uterine existence. The first child is still alive, and is reported as healthy.

CASE II is as follows (for it I am also indebted to Dr. K.): I was asked to see a baby five weeks old. Baby was the second child. The first was a healthy girl of four. There had been no miscarriage between. Baby presented some curious symptoms; among them a slight general roseola and certain ulcerated papules about the anus which were unmistakably syphilitic. The mother also presented certain signs of syphilis, chiefly papules on the palms of the hands. In this case the father acknowledged that he had gone astray during his wife's pregnancy and had contracted a chancre which he had given to his wife at about the fifth month. In this case also the confession of the father is necessary to establish the exact truth, and it falls short of scientific proof.

CASE III is a case related to me by Dr. M. I never saw the woman professionally, but I was informed of the progress of the case from time to time. In regard to it Dr. M. gave me the following notes:

Mrs X consulted me on account of an unusual and profuse vaginal discharge. The discharge was purulent. She was three months pregnant. On examination the mucous membrane of the vagina was found to be highly injected and bathed with a muco-purulent discharge; meatus red and discharging pus; micturition frequent and painful. On the cervix uteri, near the os, was a round, indurated (suspicious) sore. Diagnosis, gonorrhea, with probable chancre.

The husband would not submit himself for examination. The wife stated that for the past three weeks he had had trouble with the genitals, for which he was using ointment, injections, etc. She stated that he was under the care of a physician, a friend. Later the physician called at my office in the interest of his patient, and after direct questions admitted that he (the husband) was suffering from venereal disease. I told Mrs. X. my suspicions, which were confirmed by the evolution of the secondary symptoms — roseola, mucous patches, etc.

She went to full term and gave birth to a male child. It was afflicted with a papular rash, purulent ophthalmia, purulent discharge from nose, and mucous patches at angles of mouth. There was almost absolute proof of the

infection of the fetus through a sore in the mother contracted in or about the third month of utero-gestation.

P. S. — I had attended Mrs. X. for several years before and after marriage. This was the third child. She never before had anything suspicious, and the other children were perfectly healthy. So I feel sure this was a primary infection.

Let me state the case in a little different sequence: Mrs. X had two healthy children. When about three months advanced in her third pregnancy she had gonorrhea, and a sore which in due time was followed by constitutional syphilis. The baby was born at full term with signs of syphilis. The evidence as to the father is a little less direct, but it rests upon the following:

- (1) The wife's infection.
- (2) The wife saw him applying various remedies.
- (3) His refusal to be examined.
- (4) The testimony of his physician who told the story to the wife's doctor, and begged him to shield the husband.

As a result Mrs. X. obtained a divorce, but the question of infection was not submitted to the judge.

We have then three cases in which the syphilis of the child is thought to be due to an inoculation of the mother during the course of the pregnancy — in each case by the father, who acquired the disease after the conception had taken place, the confession of the father being the ground of diagnosis in the first two cases, the story of the inoculation by the father's doctor (with confirmatory evidence) being the ground of such belief in the third case. Each one of these cases alone falls short, to my mind, of absolute scientific proof; but they are cumulative. They are known to me so well that I am personally convinced of their truth.

In addition to these cases there are others which cannot be advanced as proof under the requirements laid down, because of our ignorance of the father. Such a case is the following, which occurred at the Lying-in Hospital, where they do not intend to take syphilitics.

A young girl was admitted in apparent health. The day after delivery she broke out with a papular syphilide. I saw her a day or two later, when careful examination revealed a sore on the vulva which I believed to be a primary lesion. The girl admitted intercourse with a man, not the father of the child, two months previous. The baby broke out very soon after birth with a syphilide. I saw it several times. It was under the care of an old colored woman, in the worst possible conditions, and finally died, as much from neglect as from disease. The mother continued to show signs of syphilis for over a year.

These cases seem to me to possess value beyond that obvious at first glance. The whole subject of syphilitic heredity is a difficult one. Our knowledge is incomplete. If we can settle the matters involved in the condition of the placenta we can have so much clear ground beneath our feet and have advanced a long way toward understanding the whole question.

I have made no attempt to get together the evidence already existing on this subject. It seemed to me of more value to present these cases just as they stand, to weigh what they may, but particularly with the hope that they may be instrumental in bringing about uniformity in our belief on the subject and that they will induce more careful observation of the syphilis which is just as rich in cases for study in this country as in

those countries to which we are accustomed to look for instruction.

It seems to me that such a statement as the following expresses our knowledge and its limitations, and might be accepted by all the authors whose statements I have quoted.

(1) It is universally admitted that there is normally no direct communication between the maternal and fetal blood.

(2) There is proof, however, that certain contagious diseases are conveyed to the fetus *in utero*.

(3) In some of these cases it is shown that hemorrhages have destroyed the original structure of the placenta and opened a path of communication.

(4) It is then no longer possible to say that intra-uterine infection is impossible in syphilis.

(5) Clinical observation shows that intra-uterine infection does take place in syphilis.

(7) Whether such infection is invariable or what its limitations are, we do not know.

#### ON PERIODICAL NEURALGIAS OF THE TRIGEMINAL NERVE AND THEIR RELATION TO MIGRAINE, WITH SPECIAL RELATION TO THE INTERMITTENT SUPRA-ORBITAL NEURALGIA.<sup>1</sup>

BY JAMES J. PUTNAM, M.D., BOSTON.

(Concluded from No. 3, p. 55.)

CASES of supra-orbital neuralgia of *malarial origin*, the true "brow ache," are very rare among us. I have notes of but two where that seemed a possible cause. It is also not unlikely that the importance of this factor has been overrated abroad. Delame<sup>15</sup> reports a case where the malaria preceded the neuralgia by five years, which, perhaps, amounts to saying that there was little connection between the two.

Finally, the question comes up as to the relation of this form of neuralgia to migraine, and as to its dependence upon an hereditary tendency.

The cases that I have seen range themselves, in this respect, in the following groups: (1) those in which no migrainoid or other special neuropathic tendency is traceable; (2) those where other members of the family have had this same form of migrainoid neuralgia with perhaps a touch of true migraine; (3) those where the patient's attacks and those seen in other members of the family approach very nearly to the true migraine type, so that, in fact, the diagnosis is in question. I give briefly a few illustrative cases:

The first case is that of a healthy young Irishman,<sup>16</sup> twenty-four years old, who during a good part of the past ten months, and steadily for the past eleven weeks, has suffered from severe right supra-orbital neuralgia, the attacks recurring regularly between eight and nine in the morning, and lasting from four to six hours. No malarial history could be obtained, and, in fact, the patient was wholly unable to assign any cause, and could not recall that the illness had been preceded by coryza. Neither could he nor his sister remember that other members of their family had had migrainoid attacks or other nervous affections. It is, however, open to question whether the testimony with regard to either of these points is fully reliable. So far as the

family record is concerned, the details of the health of the parents left at home in Ireland, as had happened here, might easily be unknown to children going off at an early age to shift for themselves. As regards the previous occurrence of frontal sinus catarrh, the patient incidentally mentioned that during his attacks of pain, but only then, he was apt to have a thick discharge from the nostril of the affected side, and an examination made at the hospital by Dr. J. P. Clark, of the laryngological department, showed the presence of pus above the middle turbinate.

The Dr. Head test, made by passing a blunt point over the skin, showed that there was slight hyperesthesia of the affected area, and pinching the skin confirmed the observation. There was tenderness to deep pressure over the supra-orbital nerve. Large doses of quinine (15 to 20 grains), given at four o'clock in the morning, at first relieved the pain, then for a few days failed to relieve it; but by the aid of this treatment, combined with deep cauterization of the nostril and a few doses of Fowler's solution, the patient steadily and rapidly improved.

The next two cases illustrate the second group, where there is an almost strictly homologous inheritance, yet with a shadow of migraine in the background.

The first is the case of a vigorous Irish patient,<sup>17</sup> twenty-seven years old, one of a family of twelve healthy children. The form of the neuralgia was exactly that which has been described, with daily outbreaks, occurring in groups covering several weeks.

The first seizure had attended a sharp catarrhal attack, possibly of grippal nature, four years before his visit to the hospital; since then the illness had recurred each year, and always in the autumn until last year, when it came in August.

His mother, one brother, and one sister have all had closely similar attacks and none of them have had typical migraine, though the sister has had headaches which are perhaps of that nature. The mother's intermittent or migrainoid neuralgia recurred for five or six years in the form of groups of attacks, each covering several weeks. The brother has had two such groups, the first of which was brought on, like his own, by an attack of gripple, while the second followed it the next year. The sister had had several groups of attacks, generally occurring in May.

The next case is that of a healthy man, fifty years old, somewhat neurasthenic, who had had typical groups of attacks, separated by intervals of several years in length, ever since his boyhood. Almost invariably, coryza, with inflammation in the frontal sinus, had been the exciting cause, though one severe attack came on in July, without apparent cause. The severity of the attacks has varied greatly, and in the severest examples there had been, besides the morning recurrence, a return of deep-seated, dull headache toward nightfall. One group of attacks was prolonged for months, and seemed to give rise to a sort of indolent neuritis of the ophthalmic division of the fifth, attended by thickening, apparently of the periosteum under and above the eyebrow, which had not wholly disappeared at the end of several years. The endurance of the eye on the affected side was diminished for years, and at times scanty crops of tender papules would appear on the skin of the forehead, independently of the attacks of neuralgia. Fatigue would also bring on slight pain at any time.

<sup>15</sup> Read before the Association of American Physicians, May, 1896.

<sup>16</sup> Gazette méd. de Paris, 1897, 239.

<sup>17</sup> No. 13,729 in hospital books.

<sup>18</sup> No. 12,981 in hospital books.



The family and personal history in this case are quite interesting. None of the patient's immediate family had suffered regularly from typical migraine, but his mother had been very subject to headaches of one or another sort, and a cousin had had migraine her life long. The patient himself had had, but only once in his life, an attack of glimmer scotoma, lasting half an hour, and not followed by headache. A brother had had a similar single attack of scotoma, followed by headache, in short, an attack of migraine.

The mother had had numerous attacks of intermittent migrainoid neuralgia, just like those of the patient, and a sister had had a single group of severe seizures of the same sort, covering a space of two weeks. These had followed a period of intense fatigue and excitement, besides a prolonged exposure to a cold wind, and the painful extraction of a large tooth. The sister's attack had been succeeded by a severe pseudo-angina pectoris, which lasted for several weeks and made walking very difficult. The same sister, when fifteen years old, had had repeated attacks of intermittent headache of the same sort as those of the patient.

Finally, I will give briefly three histories showing how headaches which would ordinarily and properly be called migraine may change into something more nearly resembling this intermittent migrainoid neuralgia, the sort of change to which Anstie long ago alluded.

The cases to which I wish especially to allude are the following:

The first patient is a lady,<sup>18</sup> now sixty-six years old, who has suffered for fourteen years or more from intermittent headaches, which almost invariably affect the right side though occasionally the left. In the early days the attacks used to recur every week or two, but of late years they have come every day, with rare exceptions. At first, also, the pain used to begin at nine or ten in the morning and go off in the course of the afternoon, but for many years the onset has been at two to four o'clock in the afternoon and the pain has continued until night, or even until midnight or one o'clock in the morning. For some hours before the attack begins she has an unnatural sensation in the legs, described as a sort of coldness, and often a sense of numbness about the lower jaw on the left side — i. e., the side opposite that which is the seat of the pain. The pain mainly affects the forehead and eye, but as the attack passes away it streams down the side of the nose. There is frequently nausea during the attack, but rarely vomiting. Special tenderness over the supra-orbital nerve and hyperesthesia of the skin are not present, and there have been no positive signs of neuritis, nor any distinct history of frontal sinus catarrh. Before these attacks began the patient used to have occasional "headaches," though not to any great extent, and her mother used to have from time to time so-called "nervous headaches" which came on in the morning and lasted for a few hours.

The following case is of a similar kind:

The patient was a Hebrew woman, thirty-six years of age. Ten years or more before my examination she began to have typical migrainoid attacks, recurring every two or four weeks and lasting a single day; and these attacks continued to recur during four years. Then the neuralgiform seizures of the present type began, but still intermingled more or less with the one-

day attacks. The new type is characterized by daily attacks of pain in the orbital and supra-orbital areas of the left side, occasionally the right side, coming on at ten in the morning and lasting till six in the afternoon. In the course of the past six years she has had three or four groups of these attacks, each of about four weeks' duration. One of her eight children and a cousin have "sick headaches" of some sort. The group of attacks for which she came to me had been preceded by a severe cold in the head. While she continued in attendance she received great benefit from a vigorous quinine treatment, and has remained free from pain almost constantly up to the present time, an interval of four months.

The third case is that of a gentleman of sixty-seven years, who has had, for fourteen years or more, what he himself calls "neuralgia" of the head, distinguishing it in this way from the "sick headaches" which followed him closely all the years of his middle life, finally shading off gradually into the attacks from which he now suffers. I omit the details, because there seems no doubt that the case is really one of migraine with changing type. He says that the present pain is altogether more acute in character, and more inclined to involve the rest of the face, especially at the junction of the face and the nose. The time of onset has also changed from 10 A. M. to 2 or 4 P. M. His mother suffered from similar attacks.

As regards the *treatment* of this intermittent headache, it is certainly true that it is amenable to quinine to a far greater extent than is the case with migraine. Certain writers have also found arsenic in large doses very useful, and I am now making observations on this point. The quinine needs to be given in large doses, fifteen to thirty grains a day, and the best plan seems to be to give the whole quantity in one or two doses about four hours before the attack is due. The local treatment of the nasal passages is also of great importance, for treatment there may indirectly improve the condition of the frontal sinuses. For the relief of the pain itself, the coal-tar remedies are not, I think, of great value, though they undoubtedly help somewhat. Cocaine instilled into the eye occasionally acts surprisingly well, and I have known galvanization of the frontal area, with a current-strength as great as could be borne, to be of service. In inveterate cases, all these remedies seem to fail, even quinine, but change of climate may remain very useful. I have tried, with good effect in one case, the treatment by fl. ext. ergot in large doses, recommended some years ago by Dr. W. H. Thomson, of New York. It is doubtless true that habit comes in as a factor in perpetuating these attacks, as it does so often in nervous affections, and moral influences and changes of scene exert more effect than might be expected of them. I know of one case in which the pain ceased to recur the moment the patient started on a trip for his health. It is difficult to give a satisfactory explanation of such a phenomenon as this, but, taken in conjunction with the many other facts of kindred significance, we must conclude that pain, in spite of the prominent place which it occupies in the mind of the patient, often has a slighter hold than might be expected. The story is told of Sir John Lawrence, who was a man of remarkably strong will, that a severe facial neuralgia, to which he had been a long time a victim, disappeared when the news of the Indian mutiny was brought to him, and did not return in spite of the hardships which the situ-

<sup>18</sup> Very kindly referred to me by Dr. R. H. Fitz.



ation induced. Pain is, in fact, the symptom which hypnotism and mental impressions of every sort most readily succeed in banishing.

I have spoken hitherto of the relationship between the supra-orbital neuralgia and migraine. I have, however, the notes of two cases, in one of which the second division, in the other the third division, of the fifth nerve was the seat of the main part of the pain, although in other respects the cases are evidently examples of migraine. It might be considered as unnecessary to report these cases, since it is well known, and Mœbius dwells particularly on the fact, that the pain, even in typical cases of migraine sometimes involves the face.<sup>19</sup> One may also infer from his remarks, with regard to an analogous point, that when the pain is felt in these areas that are usually exempt, it is not necessarily as an affair of irradiation in a specially severe attack but rather because the case is of a certain type. Nevertheless, it must certainly be only in very exceptional cases that a nerve-area in the lower part of the face is so exclusively involved as in one of the instances which I shall report, while the fact that the localization seemed to be determined by the disease of the root of the canine tooth would seem to imply that the corresponding part of the nucleus of the fifth nerve had acquired an abnormal predisposition. The case is, in outline, as follows:

The patient, now a lady of fifty-four years, had suffered at long intervals from ordinary sick headaches, but only after attacks of indigestion, as she thinks. Her mother and brother are subject to similar headaches. In the year before I saw her she had an abscess of the face set up by the disease at the root of the canine tooth on the right side, and with it suffered severely from pain in the cheek below the eye. After ten days the tooth was withdrawn, but the abscess discharged a little for several months afterward. Ever since that time she has had attacks of severe pain in the face beneath the eye, recurring at intervals of about two weeks. The pain lasts with severity for twenty-four hours, sometimes a little longer, and is often attended with nausea and vomiting. The right eye is also involved and the gums become sore. Occasionally the lower jaw becomes painful, and occasionally, also, the supra-orbital area. The pain is felt in the morning the moment she wakes, and does not pass off till nightfall. The right side of the head is occasionally affected, but not much or often. The eye is sensitive to light during the attack. The attacks come on sometimes when she has been feeling remarkably well, as happens often with ordinary attacks of migraine, but they have never been attended with visual disorders or paresthesia.

The second case is that of a lady of thirty-two years, with a family tendency to migraine. She has herself had for some years severe headaches recurring about once a week. The pain in these headaches usually begins in the occipital area or at the vertex, and spreads over the rest of the head. It used to come in the morning, but now oftener toward night. Besides these headaches, and, she thinks, as a distinct affair from them, she has severe attacks of pain of what she calls "neuralgia" of the face and teeth on the right side. These attacks recur with more or less regularity once or twice a week, and last, generally, several days,

the pain letting up toward night and coming on again more severely in the morning. About a year before her headaches began she used to have neuralgia of the leg, and this has of late been troubling her. The lower jaw becomes tender when the pain is severe, and there was at the time of my examination a small lymph-gland to be felt under the jaw, which is said to become painful and to throb during her attacks.

I have said that Anstie<sup>20</sup> boldly takes the position that migraine is a neuralgia of the ophthalmic division of the trigeminus, and that, like the rest of these neuralgias, it is due to degenerative processes going on in the primary nucleus of the nerve. He finds his justification for this classification in the fact that no sharp line can be drawn between the complex forms of migraine, on which most of the descriptions have been based, and the localized neuralgic form. Even in the life of one individual the disease may change from one to the other of these types.

Mœbius<sup>21</sup>—whose views reflect, as usual, the outcome of good observation and clear thought—regards migraine as a sign of hereditary degeneration, though capable of occurring symptomatically in connection with other cerebral disorders. He rejects the term "neurosis," as meaning nothing and only favoring a mystical dualism, and, after discussing intelligently the arguments for the localization of the disease-process in migraine, and throwing out absolutely the vasomotor theory of Du Bois Raymond, he leaves the problem of pathology as at present insoluble. Mœbius does not discuss at length the relation of migraine to neuralgia, but sees no value in connecting them, and notes that the pain in the two sets of cases is very different in character. Yet, incidentally, he brings out several facts which are important for the view which I wish to enforce, such as that the pain may spread over the upper face and even the maxillary region, and that tenderness may be present over the points of exit of the supra-orbital and infra-orbital, and even the mental branches of the fifth nerve, and that herpetic eruptions may occur on the nose, etc.

Henry Head,<sup>22</sup> of London, whose elaborate investigations on disturbances of sensation of the skin, with special reference to referred cutaneous pains in visceral disease, have opened a new line of research in the pathology of these affections, is also of those who look upon migraine as an affection of itself. In referred headache, he says, the pain is felt in definite areas, which he has mapped out with extreme care, and the skin within these areas is hyperæsthetic to the touch of a blunt point. In migraine, he thinks, this is not the case, but the pain is deep-seated and the tenderness developed by deep pressure and by motion. The accompanying symptoms in migraine point to disorders of highly co-ordinated (cortical) functions, and Head considers it, therefore, a "neurosis *sui generis*." The experience of most writers would doubtless bear out Dr. Head's statements as to sensibility in the main, but would show, on the other hand, as I believe, that they cannot be made the basis of a classification.

Mœbius says that, for example, besides the presence of nerve-trunk tenderness, the skin over the temples may be very sensitive to light pinching in attacks of migraine, and similar statements are found elsewhere.

<sup>19</sup> Thomas cites a case of migraine observed by Mastboom, where the pain used to begin in the chin, and then attack successively the cheek, the vertex, the ears.

<sup>20</sup> Neuralgia and its Counterparts, London, 1871.

<sup>21</sup> Nothnagel's Specielle Path. u. Therap., Band xii., Theil. iii., v. Abtheilung.

<sup>22</sup> Brain, 1894. Parts lxi and lxvii.

I have very recently seen a patient with typical hereditary migraine who says that a spot in front of the vertex on the painful side is apt to be very sensitive to light pressure during the attacks, and anesthetic after them, though the pain is referred mainly to the temple. In cases of migrainoid supra-orbital neuralgia cutaneous hyperesthesia seems to be sometimes present, sometimes absent. In conclusion, though it may be that Anstie's designation of migraine as a form of trigeminal neuralgia is too narrow, yet signs and symptoms usually considered as neuralgia are, to say the least, sometimes mixed in with those of migraine; and, on the other hand, it would be easy to call in the testimony of other writers in defense of a view that some of the symptoms usually seen only in migraine may complicate those of pure neuralgia.

My own conviction is that the study of all these great painful affections should be based on broader and deeper investigation into the *physiological* functions which the sensory nerves subserve.

The neuroses in general, and whether motor or sensory, are in my belief a sort of caricature of physiological processes, or bits of these processes cut off from their normal relations. Traces of the neuralgias are to be found presenting themselves, quasi-physiologically, in connection with or as part of the phenomena of strong emotion.

#### DISCUSSION.<sup>23</sup>

DR. W. H. THOMSON: Some five years ago I published an article upon the treatment of periodical neuralgias with free doses of ergot, and read it before the Neurological Society of New York. Since that time I have seen a very considerable number of cases of periodical neuralgias of the supra-orbital nerve of the same kind that Dr. Putnam refers to, and have treated them successfully with this drug.

For many years I have treated migraine with the fluid extract of ergot almost exclusively. I must differ from the conclusion which I infer Dr. Putnam makes, that supra-orbital neuralgia of the periodical class is a form of migraine. I have especially asked the question whether the patients themselves have had migraine before or whether it was a family affection, and in a very small number, I do not think more than two, it has been admitted. This affection has come on with the antecedent of influenza more often than with any other antecedent.

DR. FUSSELL: I was interested in the remark that these neuralgias are scarcely ever malarial in origin. I imagine that in a very few cases have the plasmodia been searched for. Recently Dr. Johnson, now at the Soldiers' Home, Virginia, says that he has had a number of cases of supra-orbital neuralgia of periodical character in which he has found the malarial plasmodium. I shall ask him for the notes and report the cases later.

DR. JANKWAY: I should like to ask why one should not regard these cases as probably of malarial origin if they are relieved by quinine and arsenic?

DR. J. J. PUTNAM: I remember very well Dr. Thomson's paper, which I read with great interest, and in one of these cases, which I did not report, where the neuralgia involved the second branch of the fifth nerve, I used ergot with excellent results.

With regard to the relation to migraine, I have divided these cases into three classes, in one of which I was able to trace no history of migraine, while in the others it appeared.

In regard to malaria, I do not deny that it has its effect sometimes, but I could only trace a malarial history in two cases. In some of the patients the attacks began in ex-

treme youth and occurred at long intervals during their lives, but no other symptoms whatever of malaria showed themselves.

DR. WEIR MITCHELL: I want to say a word in regard to the choral relations of neuralgia. It will be generally confessed that neuralgias of the fifth nerve, and especially of some branches of the fifth nerve, tend to recur about 11 o'clock in the morning. I remember many such cases. I also have noticed that people having sciatic pain do not have a return of it in the mid-morning, but about two hours after midnight. You must remember a paper by Captain Catlin, U. S. A., and myself, where a record of eleven years of traumatic neuralgic attacks is recorded. He had spells of neuralgia which came on at special hours, when they were at their worst; one was at one in the afternoon and one at four o'clock in the afternoon. I also recall to you the interesting fact observed by him that storm conditions were the governing agencies in the production of his neuralgia. He discovered that in nearly eleven years over 90 per cent. of his attacks could be traced to storms.

### Clinical Department.

#### A CASE ILLUSTRATING A NEW METHOD OF INTRODUCING A PLATE FOR RESTORING A DEPRESSED NOSE.<sup>1</sup>

BY E. A. PEASE, M.D.

THIS patient is twenty-two years old. When three years of age he tripped and fell headlong down three steps, the whole weight of his body going on the bridge of his nose, breaking it and flattening it very badly between the eyes. As there was no doctor near, the nose was left without surgical treatment, and when the swelling went down, it was found to be very much deformed. When I saw him three months ago, the bridge was nearly down to a level with his eyes, giving an extremely broad look to it; the tip end of the nose seemed correspondingly high, and besides having a very pugged appearance, was turned markedly to right, chiefly because of a deviated septum, the right nostril being so obstructed as to be practically useless as a breathing organ.

Knowing that Dr. Harrington, surgeon to the Massachusetts General Hospital, had had some good results in correcting deformed noses, I decided to try to do something for this man. Dr. Harrington gave me some excellent suggestions from his experience, and kindly loaned me Dr. Weir's article on the subject of nose deformity. Dr. Frederick Cobb, the laryngologist, rendered me very valuable assistance at the operation. In Dr. Weir's method of introducing a plate, a skin incision is made on the side of the nose and a celluloid trough-shaped plate put through this and fitted over the bridge of the nose; but by this method a slight scar is left. In order to avoid such a scar in this patient, an incision (under ether) was made within the left nostril at the junction of the nasal bone and cartilage well down toward the maxilla; and, cutting through the mucous membrane and cartilage to the skin, I inserted a pair of medium-sized scissors through this incision under the skin and freed it from the periosteum over every part of the nasal bones well on to the frontal process above and down to the terminal cartilage of the septum below. In freeing the portion of skin towards the lower end of the nose, it was necessary to dilate the incision and turn up the carti-

<sup>23</sup> Transactions of the Association of American Physicians, 1896.

<sup>1</sup> Shown at the Surgical Section of the Suffolk District Medical Society, March 18, 1896.

laminous portion of the left nostril very much in order to turn the point of the scissors down; but as soon as the scissors were removed, everything fell back into normal position. Not having had time to get a celluloid plate such as Weir uses with the external incision, I fashioned an aluminum plate from a thin finger splint, which I took to the hospital for that purpose; feeling that aluminum, being practically a noble metal, would remain in place without corroding and acting as a foreign body. This plate I held firmly at one end by means of a hemostatic and introduced it without much difficulty through the incision in the mucous membrane and thence up over the nasal bone so it straddled it and lay just under the skin.

tubular splints of perforated hard rubber, made to fit the curve of the nostril.

There was not much bleeding. Patient recovered well. Operation was on February 27th. No sedative was required at any time. There was considerable ecchymosis about the eyes for several days following operation. The nostril splints were removed on the third day and the nostrils syringed out with Seiler's solution. Occasional syringing was the only after-treatment. The temperature and pulse having remained normal after operation, the patient was allowed to leave the hospital (St. Margaret's) on the fourth day. The plate has remained in good position as you can feel for yourself; moreover, there is no suggestion



FIG. 1. Before operation.



FIG. 2. Before operation.



FIG. 3. After operation.

The plate was one inch long and five-eighths of an inch wide, trough-shaped and corners rounded. Before operation measurements were taken to make it fit over the bridge of the nose as accurately as possible. When in position the plate rested like an inverted trough on the nasal process of the frontal bone, and the lower end of the nasal bones and cartilage, thus bring-



This plate, instead of being circular, should be bent so as to form an almost acute angle at the apex (x).

ing up the depression in the middle between the eyes and taking away the very much upturned look to the nose. No stitches were taken in the mucous membrane or elsewhere, as the edges of the incision fell accurately together. The incision in the mucous membrane was so low on the side of the nostril that the splint in position did not come near it; therefrom the incision healed at once, careful surgical cleanliness having been observed.

The deviation of the septum into the right nostril was now corrected, with Dr. Frederick C. Cobb's valuable assistance, by sawing off the bony base of the septum antero-posteriorly and cutting the septal cartilage twice, in lines running parallel with the saw cut one a quarter of an inch above the other. The resiliency of the cartilage being thus sufficiently destroyed, the septum came to the middle line easily, bringing the tip of the nose with it. The septum was held in correct position by means of two Ashe plates, which are

that the plate may act as a foreign body and work itself out.

Throughout life the patient has been so conscious of the deformity that he would have no pictures taken, so I am obliged to depend on some snap shots with my own camera, which unfortunately are not very good, yet may serve to give some idea of the previous deformity and improvement after operation. No. 1, taken before operation, a side view, fails to give an adequate idea of the flattening of the bridge of the nose; but, No. 2, a front view, shows fairly the much flattened broad nose with marked deviation to the right. No. 3, a front view after operation, shows the raising and apparent narrowing of the nose between the eyes due to the insertion of the plate, and the end of the nose brought from a right lateral to a straight forward position by correcting the deviated septum.

NOTE. — May 4th the patient presented himself at my office for examination. The aluminum plate (now over two months in position) is firmly encysted, and the patient suffers absolutely no inconvenience from it.

#### A CASE OF SYPHILIS IN MOTHER AND CHILD, WITH UNUSUAL HISTORY.<sup>1</sup>

BY GEORGE F. HARDING, M.D.,  
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As the following histories in mother and child seemed to present some interesting points in connection with hereditary syphilis, I have ventured to report them, thinking that they might be of some value in the literature of the subject.

Elizabeth B., three years of age, a well-nourished

<sup>1</sup> Read before the Boston Society for Medical Improvement, March 23, 1896.

and well-developed child, was brought to me at the skin department of the City Hospital in March, 1895, and on examining her I found the following condition:

The region about the anus and vulva was thickly studded with moist papules (condylomata). There were mucous patches in the mouth and on the tongue extending to the fauces, and in one corner of the mouth there was a small fissure. On the extensor surface of the right forearm, just above the wrist, was a circular pigmented patch, about half an inch in diameter, in the centre of which was an atrophic area; there were also, scattered over the trunk, evidences of a pre-existing eruption in the form of small pigmented spots. There was a general adenitis, but most marked in the right epitrochlear and axillary glands.

On questioning the grandmother, who accompanied the child, I was able to learn that the father and mother had both had some skin trouble, the exact nature of which she could not tell. About six or eight months before the child was born, the mother had a bad sore throat which she thought was diphtheria, and about the same time a "red rash" over the body. She was treated for this by a physician, and it all disappeared in a few weeks.

The child was born in October, 1891, and was, as far as she remembered, perfectly healthy. She had never seen any sign of an eruption on her up to the time when the present trouble began, nor had she ever noticed any sign of "snuffles."

The mother nursed her for six months, and then, as her milk gave out, put her on Mellin's Food, upon which she seemed to thrive, as when she was a year old she was a remarkably healthy-looking child. Not long after this the mother went to a neighboring town to get some employment, as her husband had deserted her, and the child was left entirely to the grandmother's care.

In November, 1894, the mother returned, and, for lack of room elsewhere, occupied the same bed with her child. She had then a number of sores on her body, some of which were "running," others covered with "scabs." Not long after this a sore spot was noticed on the child's right forearm, where she had been scratched with a pin, and this was followed by a noticeable swelling under the child's arm. This sore — which corresponded in position to the pigmented patch which I noticed on examining the child — took some time to heal, but finally did so under the application of an ointment which the mother had been using herself.

About five weeks after this, that is, towards the end of January, 1895, an eruption, which was thought by the grandmother to be chicken-pox, broke out over the child's body, but subsided gradually, leaving small pigmented spots.

Early in February, the papules began to appear about the vulva and anus, and soon after this the plaques appeared in the mouth.

This history seemed to me a rather remarkable one; but I did not feel justified in putting it on record at that time, as I had seen neither the father nor mother and had no positive proof of syphilis in either of them — although the history obtained from the grandmother pointed strongly to this. The evidence of the physician who had charge of the mother would have been of value, but, unfortunately, his whereabouts were not known.

I ordered the child to be treated by inunction, and

did not see her again until October, 1895, when she came with her mother to be looked over. The inunction had been continued for four months, and she presented no sign of any lesion. Her mother, however, showed a gumma of the leg, and complained of headache and attacks of dizziness; also on her legs and over her trunk were cicatrices, indicating previous ulcerative lesions. Upon questioning her I obtained the following history:

Thirty-eight years of age, a German by birth, she had always been healthy up to the time of infection. She was married in October, 1890. Her husband was a traveling salesman, and was gone on a business trip for about three months after their marriage. He returned early in January, 1891, and she then noticed an eruption on his body, which he afterwards confessed to be syphilis, which he had contracted during his trip. About two months after this she had a bad sore throat and an eruption, for which she called in a physician, who pronounced it syphilis. He gave her pills, which she continued for about two months, and the symptoms disappeared. Her husband, on learning her condition, left her, and she had not seen him since.

She was confined in October, 1891, and the child was born on the 20th day of that month. The child was perfectly healthy, weighing about seven pounds, had no sign of any eruption and no "snuffles." She felt sure on this point, as the physician who attended her at the time of her own eruption had told her she might expect the child to show signs of disease, and she had therefore watched carefully.

She nursed the child until she was six months old, and then gave her Mellin's Food, as her own milk began to give out. When the child was about a year old, she left her with the grandmother and went to Brockton, where, through some friends, she had a chance to get some employment.

During the summer of 1894, she began to have sores break out over the body, for which she took some "blood medicine" which seemed at first to make them better, but soon they began to break out more, and, as she was unable to do any work, she returned to Boston. This was in November, 1894.

As quarters were limited she slept with her child, who was thus brought in close contact with her. She now began to treat herself, taking more of the pills which had formerly been given to her, and applying a dark ointment, which she got from a druggist, to the sores. As a result, in a couple of weeks she was able to return to her work in Brockton.

Before she left she remembered seeing a "sore spot" on the child's arm, but never thought of it as being connected with her own condition.

She continued the ointment and pills until the sores had healed, and then remained well until September, 1895, when she began to have bad headaches at night, and "dizzy turns"; at the same time her right leg began to get sore. Being again unable to work, she returned to Boston, and, as the leg continued to get worse, she came to the hospital as her child had been treated there.

In order to make the history of these two cases a little more connected, I give a short summary — supplying such points as seem to me plausible.

Father and mother were both healthy at the time of marriage. Father, by his own confession, contracted syphilis, and infected the mother at, or near, the time of conception. Mother, when about two months on in

her pregnancy, had a sore throat and eruption, which disappeared under treatment. Child born healthy, at full term; showed no signs of eruption till over three years of age. At this time mother appeared with pustular, or rupial, lesions; slept with child, and infected her with a primary lesion on the arm, at a point where there had been a pin scratch. Adenitis and possibly a vesicular syphilide (thought by the family to be chicken-pox) followed, and a few weeks later papules and mucous patches. Ulcerative lesions disappeared in the mother, under what may be supposed to have been mercurial treatment, leaving cicatrices. Mother subsequently developed gumma of the leg and signs of cerebral infection.

Taking the history as it presents itself in this summary — although all the points were not proved by personal observation — it seems to me to be one of a child born apparently healthy of syphilitic parents, subsequently infected by its mother with a primary lesion, and showing signs of an acquired syphilis.

I have been unable to find any report of a history resembling this. Arning, in the *Vierteljahreschrift für Dermatologie*, in 1893, reported a case; but the symptoms occurred when the child was but four weeks old, and might very possibly have been hereditary. In the present case, however, the circumstances are, it seems to me, against its being one of hereditary syphilis.

In the first place there is, to my mind, a distinct history of a primary lesion — attended as it was by extreme adenitis in the arm on which it was situated, together with the pigmentation and cicatrization which I observed at its site — and this was followed by an eruption which could very well correspond to the so-called secondary eruption. One can easily conceive how a macular eruption could become vesicular in a child, whose skin is much more delicate than is that of adults, and such a condition be considered varicella by the family. This condition being untreated, one could naturally expect moist papules and mucous patches to follow.

Then again, it is generally admitted that the early symptoms of hereditary syphilis cease to appear after the second year; yet this child was three and a half years old, and showed lesions which certainly would not be called late hereditary.

It is, I think, remarkable that the child was born healthy and showed no signs of disease up to the time of its supposed infection; since, when both parents are diseased so near the time of conception — and I think I can assume that this was the case here — congenital syphilis, or miscarriage and death of the fetus, is most apt to occur. It seems hardly credible that the short treatment which the mother had could make such a difference; and yet, I think that should be allowed.

It might be remarked, and truly, that parents are not always observant, and that slight symptoms might occur without being noticed; but in this case I have every reason to believe that the mother was observant, as she had been told that she might expect the child to be diseased.

It might possibly be suggested that the mother was not infected by her husband, but acquired the disease elsewhere after the birth of her child. But this seems to me to be far from probable, as the husband, according to his own statement — I regret that I am unable to prove it from personal observation — had the disease in its most active stage at the time of her conception;

furthermore, she denied ever having had any intercourse with others than her husband either before or after the birth of her child. I am perfectly well aware that such statements are not by any means always to be depended upon; but in this case, it seems to me, there would hardly be any reason for deception; moreover, the mother was, I think, a hard-working and respectable woman.

If, then, the facts obtained from the mother were true, I should feel justified in drawing the following conclusions from this history:

(1) That in this case, a short treatment of the mother (supposed to be mercurial) was sufficient to render the child free from signs of early hereditary disease, although the conditions were most unfavorable, that is, both parents were syphilitic at or near the time of conception.

(2) That the child was not protected from subsequent contagion by the presence of early syphilis in father and mother.

(3) That the child was inoculated with a primary lesion by her mother — who had herself contracted the disease from the father previous to the birth of the child — and showed signs of an acquired syphilis.

(4) That it is necessary to warn subjects with active syphilis of the danger of accidental contagion, not only to those with whom they may be brought in contact, but to their own children as well.

## Medical Progress.

### RECENT PROGRESS IN OBSTETRICS.

BY CHARLES W. TOWNSEND, M.D.

(Concluded from No. 3, p. 62.)

#### THE WALCHER POSITION DURING PARTURITION.<sup>11</sup>

Andrew F. Currier calls attention to the value of this position in lengthening the antero-posterior diameter of the pelvis. The patient lies on her back with a pillow under the sacrum, and the legs are allowed to hang downward over the edge of the bed. By this extreme extension a gain of one centimetre or two-fifths of an inch in the conjugate, may be obtained over the ordinary lithotomy position, which is one of extreme flexion. He relates cases reported by Kalt, Wehle, Dührssen and Fehling, showing the advantage of this position in quickly terminating labor that had previously been slow. Fehling so elevates the mattresses that the requisite extension will be obtained with the legs covered in the bed, a modified Trendelenburg posture.

#### CARDIAC DISEASE DURING PREGNANCY AND LABOR.<sup>12</sup>

J. Rosenberg reports two cases of mitral disease, both dying within four hours after delivery. He gives a table of 157 cases of pregnancy from McDonald, Wenner, Lubnisky, Schleyer and Leyden complicated with pronounced mitral and aortic lesions, with a mortality of 52 per cent.

He concludes that the immense risk which a pregnancy imposes upon a woman suffering from heart disease should make it imperative that marriage be forbidden. If pregnancy exists, the question

<sup>11</sup> Medical News, March 7, 1896.

<sup>12</sup> New York Medical Journal, January 18, 1896.



whether to induce labor is a grave one. Success can only be expected if the pregnancy is terminated *before* the onset of serious symptoms. If serious symptoms from lack of compensation occur, labor should be induced at once, although death may occur in spite of premature labor.

#### POST-MORTEM CÆSAREAN SECTION, WITH DELIVERY OF A LIVING CHILD.

Dr. Edward P. Davis<sup>13</sup> reports a case where the patient, a primipara, was seized with uremic convulsions and within six hours died, while preparations were being made to deliver by forceps. Believing that Cæsarean section would be the quickest method of delivery after the patient's death, this was done as quickly as possible and an asphyxiated child delivered, which was speedily revived.

Erdheim<sup>14</sup> reports a case of sudden death by hemorrhage from a tracheal wound in a woman seven months pregnant. Immediate Cæsarean section was done, and a small child moderately asphyxiated was delivered. The child was resuscitated, but died from asthenia in thirteen hours.

#### THE POSITION OF THE FETUS IN UTERO.

Murdoch Cameron<sup>15</sup> advances a theory to account for the position of the fetus based on the findings of the position of the placenta in the operation of Cæsarean section. Thus, in dorso-posterior positions the placenta is attached upon the anterior wall, whilst in dorso-anterior positions the placenta is upon the posterior wall. He does not discuss the theories accounting for the presentation of the head.

Taking a number of observations, he concludes that O. L. A. occurs in 67 per cent. of all cases of head presentations, O. D. A. in 10 per cent., O. D. P. in 20 per cent. and O. L. P. in 3 per cent. Adding the first two and the last two together, we find anterior positions in 77 per cent., posterior positions in 23 per cent. Of breech presentations 75 per cent. are anterior and 25 per cent. are posterior.

The position of the placenta, as found in the Cæsarean section bears out his theory almost exactly, for in 70 per cent. the placenta has been found posterior, in 30 per cent. anterior. Such a relation between the position of the child and placenta favors the well-being of the fetus during pregnancy and labor.

#### THE INFLUENCE OF OPERATIONS FOR SUSPENSION OF THE UTERUS UPON PREGNANCY AND LABOR.

Goubaroff<sup>16</sup> did Cæsarean section on a woman who had been operated on for retroversion by ventro-fixation. The child presented transversely, and the section was done to avoid the risk of rupture. Firm adhesions were found between the uterus and the anterior wall of the abdomen. Both mother and child were saved.

Mackenrodt<sup>17</sup> says that the uterus is held in these cases in a pathological anteфлекed position, and normal pregnancy and labor are only possible when the adhesions following the operations gradually loosen spontaneously. If this does not occur abortion or even rupture of the uterus may take place. There is

less danger when the uterus is suspended by ventro-fixation than by vaginal fixation, because the adhesions then loosen spontaneously with less difficulty.

Graeffe<sup>18</sup> reports a case of a multipara, thirty-eight years of age, where the uterus had formerly been operated on for suspension following the removal of a subserous myoma. The cord was prolapsed and the child dead. The uterus was firmly contracted upon the child; and to avoid rupture in doing version laparotomy was done and the uterus amputated. The patient died shortly after the operation, and at the autopsy the anterior vaginal wall of the uterus was found adherent to the vagina. The right broad ligament contained a rupture which opened the pelvic cavity into the vagina. Through this rent fatal hemorrhage had occurred.

In a second case the uterus had been fixed to the vagina by Mackenrodt's method. The fetus was transverse, and could be plainly felt as the wall of the uterus was greatly thinned, thus making rupture imminent. In addition the patient became eclamptic. Cæsarean section was done, and both mother and child recovered.

George M. Edebohl<sup>19</sup> reviews at length the relation of the operation for vaginal and ventral fixation of the uterus with pregnancy.

He quotes Strassman<sup>20</sup> as having recorded the following disturbances of pregnancy following vaginal fixation of the uterus: (1) disorders and pain in the vaginal cicatrix (Dührssen, six cases); (2) abortions — 25 per cent. at least in Dührssen's cases, over 27 per cent. in his own; (3) vesical pain and disturbances of micturition.

The following are serious complications and disasters of parturition: (1) Strassman:<sup>21</sup> transverse presentation, prolapse of funis, very difficult version due to abnormal conditions established by vaginal fixation, severe post-partum hemorrhage, rupture at site of cicatrix. (2) Strassman:<sup>22</sup> delivery *per vaginam* impossible, cervix above promontory of sacrum and pointing upward, Porro operation, rupture of vagina, death from intra-peritoneal hemorrhage. (3) Graefe:<sup>23</sup> transverse presentation, cervix above pelvic brim and directed upwards, version impossible, Cæsarian section. (4) Wentheim:<sup>24</sup> version rendered necessary as well as difficult and dangerous by same conditions as above. (5) Rühl<sup>25</sup> reports 235 vaginal fixations with 12 subsequent pregnancies. Three required version. In two incision of the vaginal cicatrix was needed, with (in one) craniotomy in addition, before delivery could be effected, the second child also being lost.

At the last meeting of the American Gynecological Society, Dr. Charles P. Noble presented a statistical study of this subject. Out of 808 cases in which *suspensio uteri* was performed by American operators and one ovary left, there were 56 pregnancies. From a study of these cases Noble concludes that *inertia uteri* is not infrequent, and that serious obstruction to labor will occur if the fundus of the uterus becomes imprisoned in the pelvis. If the fundus and anterior wall of the uterus becomes imprisoned below the point of suture to the abdominal wall, two serious consequences result, namely: (1) the posterior wall of the

<sup>13</sup> Medical News, February 1, 1896, p. 119.

<sup>14</sup> Centralblatt für Gynäkologie, 1896, No. 14, p. 377.

<sup>15</sup> British Medical Journal, February 29, 1896, p. 525.

<sup>16</sup> Archiv. de Toccol., 1895, No. 11.

<sup>17</sup> Monatsschrift für Geburtshilfe und Gynäkologie, 1895, Bd II, Hft. 5.

<sup>18</sup> Loc. cit., Hft. 6.

<sup>19</sup> Medical News, March 14, 1899, p. 282.

<sup>20</sup> Ges. f. Geb. u. Gyn. zu., Berlin, October 25, 1895.

<sup>21</sup> Loc. cit.

<sup>22</sup> Monatsschrift f. Geb. u. Gyn. vol. II. No. 6.

<sup>23</sup> Centralbl. f. Gyn., 1896, No. 2.

<sup>24</sup> Loc. cit., No. 5.

uterus must afford the necessary room by exaggerated development; (2) the hypertrophied fundus and anterior wall may constitute a tumor, and so block up the inlet of the pelvis. This had occurred in a number of reported cases.

Of 165 pregnancies reported in foreign journals since 1891, as occurring after suspension of the uterus, there were 17 abortions, seven premature labors and 60 full-term labors. Of these 60, 18 were complicated, namely, two artificial extractions, eight forceps, five versions and three Cæsarean sections. There were three deaths from labor, or about five per cent.

Alexander's operation does not interfere with pregnancy or labor, while vaginal fixation must now be considered as unjustifiable in women of child-bearing age.

#### ANESTHETICS IN NORMAL LABOR.

Berkoemsky<sup>25</sup> finds that ether lessens the suffering from labor pains and at the moment of birth it can make gestation painless. Given in small quantities it shortens the duration of labor—54 minutes in primiparæ—increases the efficiency of the pains and diminishes the intervals between them. The puerperal period was not influenced unfavorably and post-partum hemorrhage did not occur. Involution went on well, and there was no unfavorable influence on lactation. When used to produce complete surgical anesthesia, the fetus is similarly affected. This condition, however, speedily passes off without harm to the fetus.

Experiments with chloroform in labor produced the same favorable results as with ether.

#### RELATIONS OF PREGNANCY TO SURGERY.<sup>26</sup>

Mayo Robson discusses the question of general surgical operation during the course of pregnancy, and relates eleven cases of serious surgical operation during pregnancy without any effect on the course of the pregnancy except in one case where premature labor came on from an emotional trouble after the wound was healed. The list of operations includes removal of uterine myoma, amputation of breast for cancer, ovariectomy, strangulated femoral hernia, operation on piles by the canter, and cholecystotomy. The operations were from the second to the eighth month of pregnancy. This reversal of the old law of surgery during pregnancy he believes to be brought about by anesthesia and asepsis.

#### EXTRA-UTERINE PREGNANCY.

Harrison Cripps<sup>27</sup> discusses first the diagnosis of extra-uterine pregnancy as regards the situation of the hemorrhage. If the fetal sac protrudes upwards from the tube and rupture takes place into the abdominal cavity, pain, though severe, is not so intense as when the bleeding is into the broad ligament. The general symptoms are, however, graver, and the patient may become pulseless in an hour or two. In these cases the abdomen is resonant in front, but often dull in the flanks. No tumor can be felt abdominally or *per vaginam*. When the blood is poured downwards it comes out between the layers of the broad ligament, the pain is more intense and paroxysmal like labor pains, and there are slight symptoms of loss of blood. On deep abdominal palpation and by vagina a hard

tumor can be felt on one or the other side of the cervix. By rectum a marked constriction is often present at about four inches from the anus; this is due to rectal fascia, which pass round the bowel and are continuous with some of the broad ligament fibres. Hence if the broad ligament is pulled upon, as it is when distended by an effusion between its layers, the rectal fascia become drawn tighter, producing a ring-like stricture. Rupture into Douglas's pouch is, however, the commonest form of rupture. A localized peritonitis is set up by the slight oozing, and thus the general cavity of the peritoneum is shut off. The sudden acute pain and collapse of the two other varieties are absent. The general history of pregnancy may be present, together with some pain about the pelvis. *Per vaginam*, a swelling, elastic and like an ovarian cyst, is felt behind the uterus.

In rupture into the abdominal cavity immediate operation is the only method of saving life. In rupture into the broad ligament there is no doubt that a large number of cases recover spontaneously and the fetus dies. In some, however, the distended ligament may rupture and fatal hemorrhage into the abdomen takes place; in a very small number of cases the fetus may go on developing; while in other cases suppuration may result in the clot. These latter occurrences are so exceptional that we are justified, if there is no increase of the swelling, in simply keeping the patient absolutely quiet. If the symptoms of hemorrhage continue, or the swelling increases, and in all doubtful cases under good surroundings, laparotomy should be done. The diagnosis of hemorrhage limited to Douglas's pouch is always doubtful, hence laparotomy should always be done. Clearing out the hematocele is safer than leaving it to be absorbed.

Where there is a living fetus three courses are open to the surgeon: (1) to operate at once and remove the fetus; (2) to wait till near the natural time, with a view to remove a living child; (3) to wait till the death of the child after its full term. He quotes from Bland Sutton as follows: "In 16 cases laparotomy was done after the death of the fetus at full term; all recovered. In 18 cases laparotomy was done between the seventh and ninth months. Of these, eight died, and only two children lived any length of time."

#### SYMPHYSEOTOMY, AFTER-EFFECTS.

A study of the after-effects of this operation is presented by Edward A. Ayers,<sup>28</sup> from a table of 73 cases compiled from the letters of 44 operators in Canada, the United States and Australia. In 44 of these cases no motion in the symphysis was found after recovery; in 19 there was slight motion, two with a quarter-inch, and one with a half-inch movement, but none with persisting defect of locomotion. It is to be remembered that in the majority of parturient women some motion is to be found at the symphysis to the extent of an eighth to a quarter of an inch. Pain over the sacro-iliac region has been temporarily present in some cases. Injuries to the bladder, of which there were two instances, should be avoidable. Care in bandaging and supporting the pelvis, followed by a long rest in bed, seems to be efficient in producing good results. Under favorable conditions, when symphyseotomy is performed early as the operation of election, the maternal mortality has been only a little above two per cent.

<sup>25</sup> Monatschrift für Geburt. und Gynäk., 1896, Bd. iii, Hft. 3.

<sup>26</sup> British Medical Journal, April 11, 1896.

<sup>27</sup> Loc. cit., March 28, 1896.

<sup>28</sup> New York Polyclinic, May, 1896.

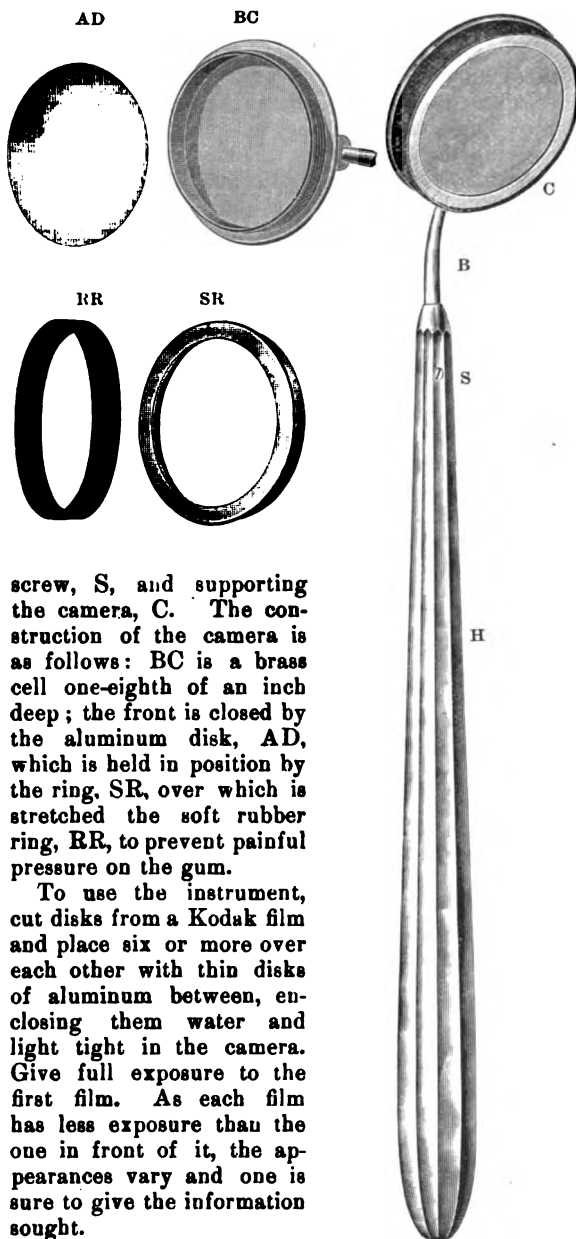


## New Instruments.

### AN ORAL CAMERA FOR RÖNTGEN PHOTOGRAPHY.

BY WILLIAM ROLLINS.

THE instrument consists of a hollow metal handle, H; a flexible sliding brass rod, B, fastened by the



screw, S, and supporting the camera, C. The construction of the camera is as follows: BC is a brass cell one-eighth of an inch deep; the front is closed by the aluminum disk, AD, which is held in position by the ring, SR, over which is stretched the soft rubber ring, RR, to prevent painful pressure on the gum.

To use the instrument, cut disks from a Kodak film and place six or more over each other with thin disks of aluminum between, enclosing them water and light tight in the camera. Give full exposure to the first film. As each film has less exposure than the one in front of it, the appearances vary and one is sure to give the information sought.

I am indebted to Dr. F. H. Williams for the opportunity to test the apparatus with his powerful generator and for coating the fluorescent screens which I use in one form of the camera.

A DISPATCH from London is authority for the statement that the Sultan is suffering from a tumor of the spine. He has refused operation for its removal because his surgeons are unable to assure him that the procedure is not dangerous.

## Reports of Societies.

### SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

O. L. SCUDDER, M.D., SECRETARY.

(Concluded from No. 3, p. 64.)

DR. F. S. WATSON described some

#### CASES ILLUSTRATING RENAL SURGERY.<sup>1</sup>

DR. ELLIOT: It is a very large subject, and I do not know where to begin. There is a great deal to be said on nephrorrhaphy alone and a great deal on all the other subjects. The cases have been very interesting. I am especially delighted with his bimanual examination of the kidney. I do not see any objection to it. In the second case in which there was a cyst in one kidney and abscess in the cortex of the other, I should like to ask why should not abscess of the cortex heal up without difficulty. There must be something back of it.

DR. WATSON: I should suppose it would. I accidentally punctured the pelvis of the kidney, and that may have accounted for the failure to heal.

DR. ELLIOT: One of the questions most of the gentlemen will be interested in is the question of leaving the fistula after nephrotomy. The commonest cases of course are tuberculosis. The common result after nephrotomy is a discharging sinus. The outpatient departments of all the hospitals are full of them; sometimes these patients do well and sometimes badly. There is a great deal to be said on both sides, and I think it is a good question for discussion. It seems to me that in this patient of Dr. Watson's the draining seems to be very successful. The patients often suffer from excoriation from urine, and the smell is often such that women won't bear it, and the urine even in this case strikes me as not very valuable. I dare say it is of some value. It is a question whether it would not be better to take out such a kidney. If the kidney really amounts to anything you beg the question. To go back to Dr. Watson's demonstration of these cases of pure hydronephrosis where the pelvis of the kidney is dilated without any disease. I see there are two cysts passed around as having been removed. It seems to me, as Dr. Whitney hinted, that that class of cases are not subjects for surgical operations, especially removing a cyst unless it is very large and mechanically doing harm. Tapping these cysts will often cure them, and so far as a simple cyst goes I do not think it is worth while to remove it. I have watched carefully most of the experiments done on the kidneys in the way of tying the ureters. I have always had in mind the injuring of a ureter in laparotomy as all of us are liable to it. I have pretty much made up my mind that if I should injure a ureter in laparotomy which could not be repaired in its course I should simply tie the ureter and not take out the kidney, in that all the experiments go to show that tying the ureter produces hydronephrosis of rather short duration and finally disappearance of the kidney. There is no doubt that a great many ureters have been tied without the operators knowing it and the patients have done perfectly well, especially in the vaginal hysterectomy; ureters have certainly been tied where the operators knew they were tied, and the

<sup>1</sup> See the Journal for June 11, 1896.

patients have done perfectly well. The experiments on dogs go to show that tying the ureter simply obliterates the kidney. So with simple hydronephrosis; I should now wait a long time before removing a kidney for simple hydronephrosis. I have just had a patient under my care who unfortunately died from the effects of operation with septic salpingitis, and in the course of this case, which has been watched a year and a half, the ureter was obstructed by a mass in the pelvis and followed an acute hydronephrosis. The ureter was involved in this salpingitis mass in the pelvis. The patient died from septic infection from this tube, and at the autopsy the kidney where the hydronephrosis existed was found atrophied and practically obliterated, and there was compensatory hypertrophy of the other side which had occurred in adult life.

I had one case of tubercular pyelitis which I removed by nephrectomy through the abdomen, and found the kidney entirely disorganized. In this case the patient made a perfectly prompt recovery without any disturbance in the amount of urine passed; and what was interesting in this case was that the next year she had a baby and went through the confinement—which is a trying time as far as the kidneys go—in very good shape.

The existence of movable kidney I don't see how even the pathologists or any one can doubt. Certainly every one sees them in hospitals and in private practice. Almost all the gynecological patients have them more or less; almost all the neurasthenics have them to more or less degree, and the question which one shall be operated on and which one not, I think is a very difficult question. Certainly the patients most neurotic who have them are very unsatisfactory patients to operate on. Last year I operated on a very neurotic patient for movable kidney, and she vomited I think for three weeks steadily, and finally recovered. She felt best when we washed out the stomach, and that gave out, and she could not be relieved of vomiting except on swallowing an electrode, and when that was passed that gave relief. This kidney was sewed to the back and that gave no relief for a long time. Finally, she came to my office and said she was relieved by that operation and the other kidney was loose. Sure enough the second kidney was in the pelvis. I did not wish, however, to undertake an operation on the second kidney. When you go into a neurotic case you never know where you are coming out. You may make them a great deal worse. This patient complained of dragging on the scar.

There is another class of cases where the acute attacks of pain are possibly due to doubling of the ureter or vessels, in which the relief is simply wonderful. How any one who has seen a case of that sort cured can fail to believe in the value of nephrorrhaphy I cannot understand.

DR. E. W. CUSHING: I have been extremely interested in both the papers, and there are several points which are of a great deal of practical importance. In the first place, I was interested in what Dr. Whitney said in regard to the fact that a kidney of which the ureter is undergoing pressure, although it may become hydronephrotic, does not attain the large size which it does where the ureter is occasionally obstructed and then able to empty itself. I first met the kidney surgically in a case of tumor of the uterus with a fibroid polyp in the uterus which completely blocked the pelvis. The patient had some symptoms of inflammation

in the abdominal wound, but did well enough as far as that was concerned, but finally died in about a fortnight with symptoms of uremia. On examination it was found that both kidneys were changed into cysts somewhat larger than my fist, the kidney substance being spread out over the cyst walls. In the next case which I had there was a cyst of the kidney, perhaps as large as my head, and I was rather surprised at the facility with which a thing of that kind could be removed. The patient got well without any trouble. What the cause of that cyst was I do not know. Another similar case I saw in a healthy young woman of about twenty. There was a growth in the abdomen. On removing it I found one-half to three-fourths of an inch of dilated ureter attached to the kidney, with total obstruction of the ureter just below it. What should cause that I do not know. The cyst was growing, occasioning a great deal of pain and discomfort, and it seems to me that it was perfectly proper to remove it, and prompt recovery followed. I had another cyst of the kidney, a large hydronephrosis, which also was removed and the patient recovered. Then I met a case which was a woful one. I started to find another similar cyst of the kidney. I tapped a large cyst and proceeded to remove it when I found there was no end to it, and the lower part became solid, and I found that I should have to remove various vital organs to get it out. I did not know what to do; so I tied a rubber ligature around the stump and put the woman to bed. She died in about three days, and it was found that there was malignant disease starting apparently from the suprarenal capsule, involving the pancreas and kidney and neighboring organs in a manner which was not apparent when I started to operate. Another case I showed here, illustrating also what Dr. Whitney says, but which I did not know in time, was a congenital cyst of the kidney, a very large one. It was growing, and when I entered the abdomen and found the thing retro-peritoneal it was not possible to distinguish what it was. I found afterwards it was a mass composed of congenital cystic tumors of both kidneys. I removed the one I had started to, but left the other. She died within a month of uremic symptoms. That is the substance of my experience with the kidneys.

In regard to this matter of ligating a ureter, it is a question, I think, of extreme importance to know whether that is a safe thing to do. I must own that I have ligated the ureter in the course of an operation. I presume everybody has who has done a great deal of surgery and held autopsies on fatal cases. It does not give rise to any pain in the kidney. I have on one unhappy occasion ligated both ureters. It was in the first attempt I made, in consultation with the late Dr. Strong, to remove a cancer from above. It was the first time I used the Trendelenburg position. The woman had no pain whatever in the kidney; she simply passed no water and finally died. The kidneys were not distended. It would appear from that experience as if the function of the kidney was stopped by the sudden ligation of the ureter, not simply that it secretes all it can and then stops, but stops its secretion when there is no chance for the urine to get out. I quite agree with Dr. Elliot that a good many ureters must have been ligated first and last by surgeons who were doing hysterectomy from above, and if one is ligated the patient probably would not die, and the slight symptoms which occur or do not occur would make me

feel that I should agree with him if a ureter was cut and could not be joined to anything it would be a safe thing to ligate it, and the kidney could always be removed if necessary from behind.

I have had some experience with nephrorrhaphy. I can easily see how a kidney which is displaced enough to kink the ureter and cause severe symptoms should be a proper subject for nephrorrhaphy; but in the cases which I have seen and those which I have done there has not been any particular symptom of kink, but the woman having found out she had a movable kidney it seems to go to the brain and nothing will satisfy her until it is fastened, when in my experience they have recovered from their nervous symptoms and expressed themselves as relieved. If the kidney does not kink the ureter I cannot see what harm it does to circumnavigate the abdomen. My practice has been splitting the capsule and fastening it all around the fascia with catgut, and putting in two silkworm-gut sutures to hold the kidney in place while union is taking place, not using any great force on the silkworm gut sutures and penetrating as little of the kidney substance as possible. The more we can get it fastened by means of the capsule and the less we pass sutures into the substance the better.

DR. PEASE: In nephrorrhaphy, when one for any reason needs to examine the abdominal cavity, he would better, I think, stitch the kidney in place through the abdominal incision, thus doing away with a lumbar incision. I speak of this, knowing of several such cases where the anterior incision was closed and an additional lumbar incision made to stitch up the kidney. There are not many cases which really need nephrorrhaphy, although the kidney may be abnormally movable; but a year and a half ago a patient with a movable kidney, whom I had watched for the preceding year, advising against nephrorrhaphy, came to my office suffering much pain in her side, and saying she had not passed more than half her usual quantity of water in the past three days. These attacks were not infrequent with her, and under my advice she had often measured her urine during them, and each time found a greatly diminished quantity of water.

On examination, the kidney was in the umbilical region, much larger than normal and tender to touch. I put her in the knee-chest position and forced the kidney into place. The next day she was all right, but was triumphant in proving to me that she really suffered extremely when she had these attacks. When at their worst she was often confined to bed for two or three days.

Having just read Dr. Osler's article on renal crises in the *Johns Hopkins Bulletin*, I determined to operate on this patient, hoping to prevent, by sewing the kidney into its proper position, the kinking of the ureter, which doubtless caused these crises, thus straightening out the ureter and holding it so. Having decided upon operation, the patient told me to be sure to see that her pelvic organs were all right, because a good gynecologist some years ago had told her that all her trouble arose in her Fallopian tube; and also, if the tube was in any way the cause of her trouble, she wished it removed. I opened the abdominal cavity along the linea semilunaris, and finding nothing abnormal in the pelvis, I pushed the bowels aside and divided the peritoneum again in flank just outside the colon, which I pushed aside, and came down on the

freely movable kidney. In the kidneys which I have seen stitched up I always felt that the adhesions were the chief thing giving success to the operation, and that the stitches were useful mainly in holding the kidney in place while these adhesions were forming. I therefore swept my hand around the kidney in all directions, freeing it from its surrounding tissue. In doing this, I started up more bleeding than I wanted, but gauze stopped it. I then took three silkworm-gut sutures with a needle on each end and passed one needle of suture through the capsule and substance of the kidney, and then through the loin to the back; the other one I passed through the loin to the back; and having placed three sutures in this manner, the kidney was put in its proper position and the sutures tied, being careful not to tie them so tightly as to cut through the kidney substance, which is very soft and friable. Under the knots I put bits of gauze so the stitches would not cut into skin, as often happens. On account of the free oozing, I put a piece of gauze down to the kidney and closed the wound with silkworm-gut sutures. The gauze came out on the second day. The sutures were taken out on the eighth day in front, and the twelfth day in back. Wound closed by first intention, except a granulating spot where the gauze came out. The patient was kept in the reclining posture for four weeks, to be sure of firm adhesions. She recovered perfectly, with no return of her painful crises, the kidney having remained securely anchored ever since.

DR. LUND: With regard to removing a congenital cystic kidney, I have recently seen an autopsy on a woman who died of uremia, in which both kidneys were found to be congenitally cystic and the liver was also full of cysts.

With regard to these abscesses of the kidney from septicemia, Lillenthal has just reported the case of a man who had an alveolar abscess following a decayed tooth. The tooth was removed, the abscess drained, and he had an attack of facial erysipelas. He returned to the hospital after six weeks with pain in one kidney and no pus in the urine. A lumbar laparotomy was done, and multiple abscesses found in the kidney, which were undoubtedly the result of the systemic sepsis. These did not connect with the pelvis of the kidney, which explains the fact that there was no pus in the urine. The patient failed to get well after the first operation, and on consultation, although there were no symptoms referable to the other kidney, an incision was made, and the kidney found filled with multiple small abscesses. The man lingered several months and finally got well. It was an example of very bold and excellent surgery.

DR. CUMSTON: I have nothing to say regarding the indications for suturing the kidney except in cases of ptosis which is frequently met with in gynecology, combined also often with prolapse of the uterus and vaginal walls. I have seen quite a number of these cases, and they have all got well by the Weir Mitchell cure. The theory of most of the men under whom I have studied is that floating kidney is due to a loss of cellular tissue in which the kidney is buried and that by putting on a suitable truss such as Glenard's, and putting the kidney back in place and keeping the patient in bed with proper nourishment, when the fat comes back the kidney will be found to be tightly anchored, and this I have seen take place in a number of cases. Not only has that proved so in case of the kidney, but

the dilatation of the stomach has greatly diminished and the relaxed uterus and vaginal walls have also come back into place. I believe floating kidney is frequent, but that in the majority of cases the ptosis may be cured by medical treatment.

DR. SCUDDER: Only one word and that is in connection with this specimen of a kidney which was removed from a patient two years ago and reported to the Society. The patient is alive and in good health. The tumor was a cystic adenoma of the kidney.

DR. ENGELMAN: I cannot assent to the unqualified statement just made, that intermittent hydronephrosis results in greater enlargement of the kidney; though undoubtedly true in cases of long standing, this enlargement is by no means a necessary sequence to that comparatively rare condition.

I have observed two such cases, the most marked being one in a patient with chronic pelvic inflammation involving one ureter and with moderate mobility and downward displacement of the kidney on the same side; this was in the earlier days, and I delayed operation until other means had been tried. The attacks began to grow less frequent some months after active uterine and pelvic treatment, with the local and general improvement which followed. The kidney, which could be readily palpated, had been but little enlarged even in the interval between the attacks and was approximately normal on later examination.

A similar result I saw in another case in which the ureter was endangered above by dislocation of the kidney, and in the pelvis by inflammatory masses and a small uterine fibro-myoma; in both the cystic distention was, of course, confined to the pelvis of the kidney, and that no permanent enlargement of the kidney itself followed I ascribe to the timely relief afforded.

DR. RICHARDSON: Dr. Cushing did not mention that most instructive case of his which illustrates the truth of the statement that one ureter can be tied. If I am not mistaken one case lived five or six years after the ureter had been practically closed, and the patient was perfectly well. I remember when Dr. Cushing reported that case, and it seemed a beautiful piece of work that he should be able to restore the continuity of the ureter by a plastic operation. That obviates the necessity of nephrectomy after opening the ureter. My experience in surgery of the kidney leads me to look upon it as one of the most interesting fields we have and one which is perhaps too little explored. I was interested to hear Dr. Whitney's demonstration of the different lesions we can reach, and particularly of the lesions we ought not to touch. If I had known of some of these lesions I, perhaps, should not have operated. In looking over the list of all I recall, I do not know of any in which nephrectomy was not justifiable. The forms of kidney disease which admit of the most brilliant results are those like the patient Dr. Watson showed, and I agree with Dr. Elliot that, if the patient's condition is good enough, it is well to extirpate in the beginning. In Dr. Goldthwait's case, done a year ago, a most brilliant recovery followed enormous pyonephrosis. I have had four or five cases of that kind in which the kidney has been extirpated. The patients have made a perfect recovery and have been well ever since; one has borne a child. In those cases in which presumably the kidney has been destroyed, in which nothing but pus reaches the bladder from the kidney, I think the prognosis is excellent, because the operation is of the simplest, most success-

ful kind, as a rule, and the work is already being done by the other kidney, and the patient is almost sure to get well. On the other hand, in one gunshot wound of the kidney death followed in twenty-four hours. Another case, an engineer of magnificent physique, died from glomerulo-nephritis from the work being thrown on the other side. In another case of chronic inflammation of the kidney, the woman died suddenly in the course of twenty-four hours after operation from shock. All the other cases have recovered, eleven in number.

I must say I agree with Dr. Elliot that in most cases of pyonephrosis the kidney should be extirpated, and I do believe that Dr. Watson's plan of exploratory incision is demanded. I recall two or three cases in which the only kidney the patient had was extirpated because the other was not fully demonstrated.

My first and only nephrolithotomy, which I reported fifteen years ago, had a sinus which persisted all his life. He finally jumped into the canal in Lowell and perished. This case was not cured, but not because we did not try. I did my best to take out the kidney, but the thing was adherent and it could not be done. I agree with Dr. Cushing as to nephrorrhaphy being an operation which should be performed only in certain cases and those of excessive mobility in which the symptoms may be due to kink rather than to mental effect, which this condition always has on nervous women, and in thin women the kidney is movable in a very large percentage of the cases. My experience would lead me to agree with Dr. Pease as to the adhesions being the cause of the cure. I think with Dr. Cumston it is not necessary to operate on these movable kidneys except in a very few instances. If we should take all women with movable kidney and sew it in position we should do more harm than good.

DR. C. G. CUMSTON read a

NOTE ON DR. CHAPUT'S ANASTOMOSIS BUTTONS.

DR. RICHARDSON: I have used the Murphy button a number of times. It is a beautiful device, but you cannot undo it. I think the author cannot have seen the different sizes of the Murphy button, because there is a size as small as the smallest button here and a size not as large as the largest. I do not believe in mechanical devices except when the patient is in *extremis*.

### Recent Literature.

*The Johns Hopkins Hospital Reports.* Vol. V, p. 481. Baltimore, 1895.

This fifth volume of "The Johns Hopkins Hospital Reports" is devoted to the study of the malarial fevers of Baltimore, and a continuance of Dr. Osler's report upon typhoid fever.

The first paper by Thayer and Hewetson is based upon an analysis of 616 cases of malarial fever observed in the hospital wards or dispensary. There is an excellent review of the literature of malarial disease introductory to the study of the cases observed. The completeness of the study and its deductions make this paper the best for the general practitioner who desires to have a scientific basis for his own care of cases of paludism.

Barker's study of the fatal cases of malaria is equally valuable from a pathological point of view.

The studies in typhoid fever are by Osler, Flexner, Blunn, Reed and Parsons. The statistical papers carry out the report by Osler published as Volume IV of the series, and show a continuance of the excellent work done by him at Baltimore. The third paper upon his five years' experience with the cold-bath treatment of typhoid fever is especially interesting. He says: "The cold-bath treatment, rigidly enforced, appears to save from six to eight in each century of typhoid patients admitted to the care of the hospital physician. While I enforce the method for its results, I am not enamoured of the practice. I have been criticised rather sharply for saying harsh words about the Brand system. To-day, when I hear a young girl say she enjoys the baths, I accept the criticism and feel it is just; but to-morrow when I hear a poor fellow (who has been dumped like Falstaff, 'hissing hot,' into a cold tub) chattering out malediction upon nurses and doctors, I am inclined to resent it and to pray for a method which may be, while equally life-saving, to put it mildly, less disagreeable."

The volume is a valuable one and adds distinction to an already splendid series.

*A Pictorial Atlas of Skin Diseases and Syphilitic Affections.* In Photo-Lithochromes from Models in the Museum of the Saint Louis Hospital, Paris. Edited and annotated by J. J. PRINGLE, M.B., F.R.C.P. London: F. J. Rebman. Philadelphia: W. B. Saunders.

Parts I, II, and III of this atlas have now been issued and lie before us. The illustrations are taken chiefly from the admirable models of cutaneous diseases that have been produced by M. Baretta during the last twenty-five years, which are now collected in the museum of the Saint Louis hospital in Paris. As an example of M. Baretta's industry, it is stated that in 1894 the museum possessed 1,800 models of his execution. These models are acknowledged by all to be the best reproductions of cutaneous lesions that have ever been made. In this atlas a number of these famous models are reproduced with an accuracy and finish, such as we are accustomed to find in this work at the hands of the French. It is aimed to reproduce chiefly typical cases of common diseases, with less attention to the rarer forms than is the case with other publications of a similar character. The plates are produced by the latest process of photo-lithography and are called "photo-lithochromes."

The translation has been admirably done by Dr. Pringle, an English dermatologist of eminence; and his annotations, although few, are extremely fitting. The text, in which explanatory wood-cuts have been introduced, is by the eminent physicians of the Saint Louis hospital, including such names as Besnier, Fournier, Feulard and others. The plates of lupus vulgaris and dermatitis herpetiformis in the first part, lupus erythematosus in the second part, and disseminated epithelioma in the third part, seem to us worthy of especial admiration and praise, although all are so good that a selection is not an easy matter. We are glad to see Dr. Pringle's annotation to lupus erythematosus, as the belief in its tubercular nature is confined to a minority of dermatologists, and is unsupported by the facts.

It is proposed to issue twelve parts in all before the atlas is completed. If the remaining portions are in any way the equals of the three that have al-

ready been issued, the work will stand as a remarkably accurate reproduction of a few of the treasures of the Saint Louis collection.

*The Therapeutics of Infancy and Childhood.* By A. JACOBI, M.D., Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; President of the Association of American Physicians; late President of the New York Academy of Medicine and of the Medical Society of the State of New York, etc. Philadelphia: J. B. Lippincott Company. 1896.

The name of Jacobi has been for the last thirty or forty years so intimately connected in the minds of the medical profession and the general public with the subject of children and their diseases, that a book from the pen of this eminent practitioner must be welcomed by all.

The author, while being a firm believer in drugs when properly used, yet continually impresses upon his readers the importance of diet and hygiene in dealing with the diseases of early life.

Dr. Jacobi's vast experience, extending over a period of many years, entitles his book to be at once received with the greatest respect; and the common sense with which one is struck throughout the whole book impresses one with confidence in what he reads.

The first chapter is devoted to the feeding of sick children, and this is supplemented in the addenda at the end of the book by a recognition of some of the later methods of infant feeding which were but little developed when Dr. Jacobi began to write his book eight years ago.

The second chapter discusses the treatment of the newly-born.

The third chapter, on general therapeutics, is replete with good advice, and should be read by all.

The author then takes up in succession the treatment of constitutional diseases, infectious diseases, diseases of the digestive organs, diseases of the genito-urinary organs, diseases of the respiratory organs, diseases of the organs of circulation, diseases of the nervous system, diseases of the skin, diseases of the ear, diseases of the eye, diseases of the muscles, and diseases of the bones and joints.

Of particular value is the general advice given as to the treatment of cardiac disease, where the author's peculiar gift of imparting the important facts connected with an especial subject is well illustrated.

The medical profession has always been indebted to Dr. Jacobi for the work which, as our foremost teacher, he has done in pediatrics and must acknowledge this valuable book as coming from the hand of a master in his art.

*Text-Book of Comparative Anatomy.* By DR. ARNOLD LANG, Professor at Zurich. Translated into English by HENRY M. BERNARD, M.A., and MATILDA BERNARD. Part II. London: Macmillan & Co. 1896.

In the second part of this work are discussed the Mollusca, the Echinodermata and the Enteropneusta. It is hardly in our province to analyze a work of this nature; but we would express our admiration of the apparent exhaustiveness, of the number and clearness of the cuts, and the richness of the literature. The handsome type and paper must not be forgotten.

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THE SURGICAL TREATMENT OF FOCAL  
EPILEPSY.

THE recent discussion on the surgical treatment of focal epilepsy before the American Neurological Association gave rise to two distinctly opposite opinions as to the utility of such operations. Drs. Sachs and Gerster of New York presented the results of trephining in nineteen cases of focal epilepsy due to injury, cerebral infantile paralysis, or some other acute cerebral condition. Three cases were cured, two greatly improved, and three somewhat improved, while in eleven cases there was no improvement. Some of the failures to obtain a complete cure, however, were ascribed to other causes, such as indulgence in alcohol and the neglect to follow proper treatment after the operation. As epilepsy in these cases is probably due to a degeneration of the association fibres originating from the focus of disease, and as this degeneration usually develops in the course of a year or two, it is obvious that surgical interference is warranted only in those cases where not more than a year or two has elapsed after the injury or after the onset of the disease which has caused the convulsions; although in cases of depression or disease of the skull trephining is admissible even though several years have elapsed. If the epilepsy has lasted but a short time and the symptoms point to a strictly circumscribed focus of disease, excision of the cortex, after careful testing to determine the precise location of the centres involved, is justified even though it may appear normal to the naked eye. The reason why such excision has not oftener proved successful is because it has not been done soon enough, before secondary degenerations were established. In long-standing cases, where such degeneration is widespread, surgical interference is useless.

Against this comparatively favorable view of the efficacy of surgical interference Dr. Starr, of New York, presented his own experience of twenty-four operations without a single cure. He was unqualifiedly opposed to operating in idiopathic epilepsy and was skeptical as to the value of operation in focal epi-

lepsy due to injury or disease. He recalled Van Gieson's researches into the very extensive degenerations which may follow focal lesions of the brain, which would render it impossible to remove all sources of irritation by operation.

Drs. Sachs and Gerster held that the results after operative procedure should not be considered until at least a year has elapsed after the operation. If so brief a period be adopted, the results, as Dr. Starr pointed out, would be altogether too favorable, for both in focal and ordinary idiopathic epilepsy much longer periods may occur, under various forms of treatment, during which the patient is absolutely free from any attack. Out of seventy cases of operation collected by Dr. Gray, only three remained free from attacks after three years. Nevertheless, if a patient be suffering from frequent attacks, and we can obtain either complete or partial relief for a period of one, two, or three years by means of trephining, such an operation, considering the slight risk to life which it entails, is certainly justifiable, unless it can be shown that in later years the condition is materially aggravated by reason of such an operation. Certain cases apparently show this, but careful studies of a large series of cases many years after operation are still necessary.

While in the light of our present knowledge we would not deprecate any measure which gives any hope of benefit for so distressing a malady, another problem arises on the pathological side which demands further research. If a localized injury to the brain gives rise to epileptiform attacks as a result of adhesions or thickening of the meninges, focal hemorrhage, scar-formation in the cortex, degeneration of association fibres or proliferation of neuroglia consequent upon that injury, may not the lesions caused by operation become the starting-point of similar disturbances? It is possible to excise a cicatrix and leave a smaller scar as a result of the operation, but it is still a scar, and experience has shown that even a small scar in the brain may be the starting-point of disastrous changes. Careful experimental work on the healthy brains of lower animals may throw some light on the still vexed question of the benefits of operative procedure in focal epilepsy.

BICYCLE ACCIDENTS.

It is a matter for surprise, considering the tremendous and sudden popularity of wheeling, and the number of men and women of all degrees of skill in riding and knowledge of the rules of the road who daily meet and pass each other on our roads and parks, that so few accidents result. The rarity of accidents conduces on the whole to a high regard for the average skill and care of the general run of riders. This fact of the rarity of accidents is still more remarkable when we consider more fully the conditions which render them probable.

In bicycling we have a considerable weight propelled at great speed on a machine whose equilibrium

is far from stable, and whose strength is only a little more than sufficient to carry its load with safety. The only sufficient reason for the rarity of accidents can be found in the fact that the machine is so low that when it is going slowly or at a moderate rate of speed the rider generally falls on his feet in case of accident, and all harm is avoided. If there had been as large a number of the old high wheels on the road as there are of the modern low ones, the proportion of serious accidents would have been undoubtedly much greater.

As it is now with the low wheel, the danger from falls and collisions increases greatly in proportion to the speed with which they are ridden. Fatal fractures of the skull have been reported several times as a result of the meeting of a pair of "scorchers" riding full tilt, with their heads low and eyes upon their front wheel instead of upon the road ahead of them. It might seem almost impossible to fracture a skull thick enough to permit indulgence in such practices, but the bicycle fool at full speed has been able to accomplish it. Accidents while coasting also occur at high speed, and are proportionately serious. In coasting a certain amount of control of the wheel is lost, and the accomplishment of sharp turns to avoid obstacles at the foot of a hill becomes impossible. No rider who is unwilling to risk the loss of his life, or serious interference with the regularity of his features, will coast except on good roads, with straight easy hills, and no crossings. The prohibition of "scorching" and coasting in our public parks is a regulation which has undoubtedly prevented many serious accidents.

Although the worst casualties usually occur to riders going at high speed, there are certain conditions which render falls even when going at a low rate of speed serious and disfiguring. Of these the principal is that in a large number of cases, particularly those which are due to suddenly running into an obstacle, the weight of the head and body being carried high, and the legs arrested by the handle-bars, the head, and particularly the face, is the first to reach the ground. A man taking a "header" from a horse starts from such a height that he may turn a complete somersault and land in a sitting posture, but the bicycle is so low that the victim strikes the ground face first, and when he has ploughed over a few yards of gravel or pavement, his physiognomy is naturally somewhat altered. A particularly dangerous accident is the breaking of the front fork of the wheel. Here the victim never has time to get his hands before his face, and fracture of the nose and jaw with serious laceration of the soft parts almost invariably results. These falls are so quick that before a man has time to let go of the handle-bars, his face strikes the ground. In fact in headers from the bicycle generally, there is no time to let go of the handle-bars in order to protect the face. Sprained wrists and broken arms are therefore comparatively rare, while broken noses and serious lacerations of the face, mouth, and eyelids are common. Bruises, sprains, and abrasions of the shoulders occur if the face escapes.

The danger from the breaking of the front fork is, of course, especially great in the case of the tandem wheel, where the fork has to bear the weight of two instead of one, and the danger from any flaw in the steel of which it is constructed is consequently greater.

The writer has recently seen two young women who were seriously disfigured by falls due to the breaking of the front forks of second-grade tandem bicycles. The moral for young men who wish to give their sweethearts a taste of the joys of riding tandem, would seem to be, buy none but a first-grade wheel, and take the front seat yourself.

Although accidents to the face, head and shoulders are the more common, fracture of the legs and bruises and sprains of the knee occasionally result from bicycle accidents, and internal injuries are by no means unheard of. A case of rupture of the pancreas due to a blow in the epigastrium by the handle-bar has recently been reported.<sup>1</sup>

The bicycle is proving itself so important a means of providing fresh air and healthful exercise to a vast number of people, that the good done by it greatly overbalances the harm resulting from occasional accidents, most of which can be avoided by careful riding and by the selection of a well-constructed standard wheel.

#### MEDICAL NOTES.

**SMALL-POX AND YELLOW FEVER IN CUBA.**—The United States Marine-Hospital Service reports that the small-pox in Cuba is increasing daily and is of a most virulent form. Over eighty per cent. of the cases occur among the unvaccinated blacks. The yellow fever is also of a malignant form, most of the cases ending fatally. As usual it is difficult to obtain any accurate report of the number of cases.

**THE PERILS OF MILITIA DUTY.**—The Second and Seventh Regiments of the Illinois Militia made a trial march and bivouac last week with disastrous results. On going into camp at night the men pulled down vines from walls and trees to make beds of. These being of the rhus venenata, the night's sleep resulted in some three hundred active cases of ivy-poisoning the next morning for the surgeons to attend. Moral: All green leaves are not laurels of war.

**NEW YORK POST-GRADUATE MEDICAL SCHOOL.**—The fifteenth annual announcement of the New York Post-Graduate Medical School and Hospital has just been issued. The rapid increase of new methods of accurate clinical research and technique at the present time necessitates occasional post-graduate instruction if the general practitioner is to keep fully abreast of the times. It is this need which post-graduate medical schools are intended to supply. The report of the New York School and Hospital shows an attendance at its out-patient clinics last year of nearly twenty thousand patients.

<sup>1</sup> Medical Record, July 18th.



**A NEW LECTURE ENDOWMENT.** — Dr. L. C. Lane, of the Cooper Medical College of San Francisco, has endowed an annual course of lectures to be known as the Lane Course of Medical Lectures, to be given, not less than ten in number, at the beginning of each medical year of the college. The lecturer must be one who by scientific work has attained eminent distinction in medicine, and may be selected from any part of the world. The matter of the lectures is to be some subject within the sphere of medical art and science. The lectures are to remain the private property of the lecturer who is to receive the generous remuneration of two thousand dollars. The inaugural course of lectures for 1896 will be given next September by Dr. William Macewen, Regius Professor of Surgery at the University of Glasgow.

#### BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.** — During the week ending at noon, July 22, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 57, scarlet fever 19, measles 44, typhoid fever 20.

**THE FREE HOME FOR CONSUMPTIVES IN BOSTON.** — On Thursday, July 16th, the Mayor of Boston gave a hearing in the Aldermen's room to the remonstrants who have petitioned the Mayor not to approve a measure passed by the city government allowing the erection of a new building upon the Quincy Street grounds of the Free Home for Consumptives. The said building is to be four stories high and some sixty by over one hundred feet long, and is to be built without the brick dividing walls required by the building ordinances of the city. The petitioners claim that the risk to the patients and the neighbors by fire should forbid the erection of a hospital building without every precaution being taken for its safety. They claim damage to surrounding residential property and an unnecessary exposure of the citizens to infection. They claim that such a hospital can be as easily and usefully maintained at a greater distance from the dwelling parts of the city. Several petitioners were heard, and the hearing was continued to a later day.

#### NEW YORK.

**THE BOARD OF HEALTH AND TENEMENT HOUSES.** — In carrying out its laudable work of reformation under the new Tenement House Act the Board of Health has condemned forty-two additional tenements as unfit for human habitation, and they will be vacated and destroyed, unless the courts, to which the owners have appealed, should decide against the Health Department. In all probability the latter will be fully sustained in its action. Of these forty-two houses, all but two are rear tenements, and their construction and sanitary condition are such as to render any adequate improvement of the premises out of the question. The normal annual death-rate in New York at the present time is 22 per thousand of the population, and in 36 of these condemned tenement houses the death

rate for the past five years has been 40.53. In one of them it has reached the extraordinary figure of 75.05; in another it has been 68.57; in another, 64.84; in another, 58.02; and in four other 52.08. In only four was it below 25. President Wilson of the Board of Health announces that this is only the beginning of the crusade against rear tenements of this class. It is believed that at least two hundred buildings will be condemned, and that, in consequence, the death-rate will be considerably reduced, not only in the districts where the condemned houses are located, but in the city at large, by reason of improved surroundings.

**MORTALITY.** — Owing to the hot and humid weather prevailing, the mortality of the city has increased from 967 during the week ending July 11th to 1,122 in the week ending July 18th. The death-rate for the week was 30.23 per thousand of the estimated population, against 22, the average for the year. Of the total number of deaths, 655 were in children under five years of age. The deaths from diarrheal diseases amounted to 330, of which 272 were in children under five. The mortality from whooping-cough was 14, or 8 more than that from scarlet fever. The deaths from diphtheria decreased to 23, and there was a slight increase in those from measles, which numbered 19.

**DEATH OF DR. FRANK W. RING.** — Dr. Frank W. Ring, a promising young New York ophthalmologist, died at the residence of his brother, Dr. Henry Ring, in New Haven, Conn., on July 17th, at the age of thirty-nine. He was graduated from the medical department of Bowdoin College in 1878 and came to New York to devote himself to his specialty. For several years he had been an assistant surgeon to the Manhattan Eye and Ear Hospital.

### Miscellany.

#### THE "INDIAN LANCET" ON THE HEMP HABIT.

AN editorial writer in the *Indian Lancet*<sup>1</sup> makes the following glowing comment on the use of hemp:

"The charms of Indian hemp are unknown in England. The people there are still too robust a race, and prefer to drown their care in good old ale or its kindred. Yet if they only once experienced the delights of Hashish, which are to those of tobacco as Chartreuse is to gin, they would think more highly of the wisdom of life of the Orientals. In the East enormous quantities of the plant are consumed. In fact, although so little is heard about it, it runs neck and neck with opium. But in England it is never used except as a drug, and even doctors there have not yet become familiar with its use."

It is not a little interesting to read in the next paragraph the account of "the most extraordinarily pleasant effects" of this drug, which only the physicians of India thoroughly know. It is the well-known description of Dr. H. C. Wood of his own use of the drug. It is said that De Quincey found the greater part of

<sup>1</sup> May 16, 1896.

his experience as an opium eater in his own imagination. Certainly an ecstatic intoxication from an American work on therapeutics has the advantage of no unpleasant after-effects and the *Lancet* might recommend Dr. Wood's account to its inexperienced British readers as a safe and cautious beginning.

#### REMARKABLE INSTANCE OF THE APPRECIATION OF THE PASSAGE OF TIME DURING HYPNOSIS.

At a recent meeting of the Society for Psychical Research, Dr. Milne Bramwell<sup>1</sup> related the case of a young woman who in a state of hypnosis showed a remarkable power of appreciating the passage of time. The subject of experiment was nineteen years of age and had received an ordinary board-school education, during which and since she had not shown any extraordinary capacity of calculation. Before treatment the patient had suffered for about twelve months from functional nervous affections, but at the time of the experiments she was in excellent health. The experiments consisted in suggesting to the patient during hypnosis that she should perform a simple act at the expiration of a certain number of minutes, such as making a cross with a pencil on a piece of paper, and at the same time writing down the time she thought it was when she did this. The interval suggested varied in the course of the experiments from a few hundred to over 20,000 minutes. Sometimes six such suggestions were made at the same time, and starting from different imaginary hours. For example, at four o'clock one day she was asked to fulfil the suggestion in 10,080 minutes, starting from ten o'clock the previous day, etc. Fifty-five such experiments were made, with only two failures. An interesting point was that on awaking, the patient had no recollection of what had been suggested and never complained of headache or gave any indication of nerve exhaustion.

#### ENGLISH ICE-CREAM.

CERTAIN confectioners and restaurateurs have a way of advertising their ice-cream of extra richness as Philadelphia or New York ice-cream, and charging the credulous with an extra price for the same. But for real denseness of richness the ice-cream of our sister cities is not likely to reach the standard of real London ices.

Dr. MacFadyen and Mr. Collyer have recently completed for the British Institute of Preventive Medicine an investigation into the nature and quality of the creams vended on the streets of London. They report, says the *Medical Record* "that ice-cream has only 26.5 per cent. of solids, the rest being water; that the solids consist of fats, four per cent.; sugar, twelve per cent.; starch, six per cent.; albuminoids, four per cent.; and mineral matter, one-half per cent. This all sounds well enough, and would lead the unwary reader to think that ice-cream was all right, but the denouement comes in the results of microscopical research. The microscope shows the presence, in London ice-cream at least, of bedbugs, bugs' legs, fleas, straw, hair, coal dust, woollen and linen fibre, tobacco, epithelial scales, and muscular tissue. Even

the microscopical examination, however, is delectable compared with the results of bacteriological studies. These reveal in street-barrow ice-cream, a maximum number of seven million microbes per cubic centimetre, while the ice-cream of the shops has only one million per cubic centimetre. The character of the micro-organisms is extremely mixed. There are the bacteria coli communis, besides spirillæ and putrefactive microbes of various kinds. We find no account of a chemical analysis, which would perhaps add the final touch to the pathological picture of the ice-cream of the shops."

#### THE JENNER CENTENNIAL IN JAPAN.

THE centennial celebration of Jenner's discovery of vaccination was celebrated in Tokyo on May 14th. The committee in charge had made most elaborate preparations, which were carried out in a very successful manner.

The meeting was held in a large pavilion in Ueno Park, Tokyo, at one o'clock in the afternoon. Over five thousand guests were present, crowding the building to its uttermost, so that, as the *Sei-I-Kwai Medical Journal* says,<sup>1</sup> "while the *manes* of the great physician had every reason to be satisfied with the numbers gathered to revere his memory, the living celebrants spent two decidedly trying hours." The hall was profusely decorated with the flags of all nations and the platform, appropriately backed by the English and Japanese colors, was ornamented with flowers and a bust of Jenner by a Japanese sculptor. On entering each guest was given a pamphlet in Japanese, setting forth a brief history of Dr. Jenner's discovery and a sketch of his life adapted for popular reading. In an anteroom was a considerable collection of vaccination relics and a library of books upon the subject in all languages.

After a display of day-fireworks—which attracted crowds of sight-seers to the beautiful park and gave it the kaleidoscopic appearance of a holiday—the exercises began with music by a military band. Count Hijikata then read a congratulatory speech, in which the reasons for the celebration were briefly set forth, and the interest taken in the proceedings by T. I. M. the Emperor and Empress, was fittingly referred to. Sir Ernest Satow followed with a most scholarly address in Japanese, which was listened to with attention, though frequently interrupted by bursts of applause; for His Excellency, being a master of the Japanese tongue, knew how to give his remarks the charm and grace always accompanying profound scholarship and diplomatic courtesy. He expressed his delight that the memory of his great countryman's discovery was thus so splendidly celebrated in Japan; and said he was greatly pleased to be there on such an occasion. Jenner's merits were indeed of the highest order, for, if he had not made this discovery, many of the beautiful faces characteristic of Japan would this day have been so disfigured as to merit the epithet *oni no kao*. Other speakers were the Marquis Hachisuka, President of the House of Peers; Marquis Kuga; Marquis Saionji, Minister of State for Education; Baron Dr. Ishiguro, Chief Military Surgeon; and Mr. Shimada Saburo, M. P. The band discoursed music in the intervals between the addresses, so that there was no dragging. The last speech was that of the Vice-President, Dr. Nagayo, who knew how to say very pleasant things of the orators who had preceded him, and who thanked in the name of the Committee the assembled

<sup>1</sup> *Lancet*, June 13, 1896.

<sup>1</sup> June 12, 1896, vol. xv, No. 5.

guests for their attendance. At four o'clock all was over, when the meeting adjourned to the Seiyoken Restaurant, close at hand, to partake of a collation. Half an hour later the guests were wending homeward."

### JACK RABBIT DRIVES.

DR. T. S. PALMER, of the Department of Agriculture, has recently contributed<sup>1</sup> an interesting study of the jack rabbits of the United States. There are some six species found in this country, none of them east of the 95th meridian, while west of that line they are of almost universal distribution, from Mexico to the far north. The number of these animals and their damage to crops cannot be realized by one who has never lived in the jack rabbit lands. The accounts of rabbit drives with the "cruel slaughter" of thousands of these long-legged jumpers are read with protests by the sentimental, uninformed persons of the East, who do not consider the results of rapid multiplying of hundreds of thousands of the dear bunnies, "five of which will consume as much as one sheep." The chief means of keeping down these pests is by the so-called drives—as fences and poison are too expensive and inadequate, and commercial utilization, the most promising method, has as yet not been extensively developed.

"The temporary effectiveness of some of these drives is illustrated by the case recorded in the San Joaquin Valley in California. Some of the early drives took place on a ranch less than one square mile in extent. In the first drive, 1,126 rabbits were killed; as soon as the animals were dispatched, the same field was passed over again and 796 more were killed. A week later there were two more drives on the same and adjoining ground, resulting in the death of some 5,000 more jacks."

There are throughout the West a large number of drives—in California some hundred and fifty. Many of these are stated fixtures occurring each year as a general holiday or race circuit. One of the chief of these in Colorado is the annual rabbit drive at Lamar, in the south-eastern part of the State, about one hundred miles east of Pueblo. The best time for jack rabbit shooting is immediately after a light fall of snow, as the tracks of the rabbits are readily seen and they show against the white better than the brown plain grass. In the early winter every year a great hunt is given at Lamar. The railroads give reduced rates and people go from as far as Denver—nearly two hundred miles—to take part in the sport. The people at Lamar furnish accommodation and food for all comers, and the gathering not seldom is numbered by hundreds. If the weather is propitious and the morning is clear and frosty the drive is sure to be successful. Thousands of rabbits meet their fate and are taken off by the gathered marksmen. A large number of the poor of Denver under the care of an efficient charity look forward each year to the Lamar drive as sure to provide them with one good meal of jack rabbit.

"While the number of these animals is seemingly as large as ever, they are likely to pass like the buffalo, for their natural foes and the advance of irrigation with the resulting warfare against them, tends surely to their extermination."

<sup>1</sup> Bulletin No. 8, Department of Agriculture.

### A COUNTRY DOCTOR'S FEES IN 1831.

DR. GEORGE A. CROTHERS, of St. Joseph, gives an interesting account<sup>1</sup> of some of the details of a country practice sixty years ago, as evidenced by the journal and account-book of his grandfather, Dr. Dunlap, of Greenfield, O. Some of the surgical entries are particularly interesting reading:

To setting thigh-bone . . . . .	\$3.00
To dressing wound . . . . .	.25
To visit and lancing abscess . . . . .	.25
To setting arm . . . . .	1.00
To lancing breast . . . . .	.25
To two visits, perforating frontal sinus and medicine . . . . .	4.00
To visit and dressing ankle . . . . .	1.00
To amputating hand and salts (!) . . . . .	5.00
To visit and reducing hernia . . . . .	1.25
To visit, opening abscess and pills . . . . .	.50
To two visits and puncturing bladder . . . . .	3.00
To dressing wound and medicine . . . . .	.62½

Dr. Crothers's comment is that "sixty years ago the charges for surgical services bore a more just proportion to those for medical treatment than in this age."

<sup>1</sup> Medical Herald, June, 1896.

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 11, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York . . . . .	1,892,332	967	559	31.30	8.20	24.20	.50	2.80	
Chicago . . . . .	1,678,967	810	343	46.56	7.52	40.48	2.88	1.76	
Philadelphia . . . . .	1,164,000	532	299	27.93	7.79	22.99	1.14	1.71	
Brooklyn . . . . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . . . . .	560,000	—	—	—	—	—	—	—	
Boston . . . . .	494,205	222	93	27.00	10.50	20.25	.90	3.15	
Baltimore . . . . .	494,315	290	143	38.22	7.02	31.59	2.73	1.56	
Cincinnati . . . . .	336,000	—	—	—	—	—	—	—	
Cleveland . . . . .	314,537	143	88	28.00	4.90	23.10	1.40	1.40	
Washington . . . . .	275,500	162	79	28.27	7.32	20.74	2.44	3.06	
Pittsburg . . . . .	238,617	—	—	—	—	—	—	—	
Milwaukee . . . . .	265,000	—	—	—	—	—	—	—	
Nashville . . . . .	87,764	39	13	15.36	20.48	12.80	—	—	
Charleston . . . . .	65,165	—	—	—	—	—	—	—	
Portland . . . . .	40,000	—	—	—	—	—	—	—	
Worcester . . . . .	98,667	31	9	3.23	19.38	—	—	3.23	
Fall River . . . . .	88,020	73	55	6.85	4.11	5.48	1.37	—	
Lowell . . . . .	64,359	44	29	45.40	6.81	43.13	—	—	
Cambridge . . . . .	61,519	39	16	22.04	15.36	18.36	—	5.12	
Lynn . . . . .	62,355	14	—	35.70	—	28.56	7.14	—	
New Bedford . . . . .	55,254	29	19	34.50	—	31.05	—	3.45	
Springfield . . . . .	51,554	22	10	29.15	12.45	24.90	—	4.15	
Lawrence . . . . .	52,153	—	—	—	—	—	—	—	
Holyoke . . . . .	40,149	—	—	—	—	—	—	—	
Salem . . . . .	34,437	12	4	—	—	—	—	—	
Brockton . . . . .	33,157	13	7	46.14	15.38	46.14	—	—	
Haverhill . . . . .	30,185	13	8	15.38	—	15.38	—	—	
Malden . . . . .	29,706	8	3	37.50	—	37.50	—	—	
Chelsea . . . . .	31,295	13	7	7.69	7.69	—	—	7.69	
Fitchburg . . . . .	26,394	8	7	37.50	—	37.50	—	—	
Newton . . . . .	27,622	9	2	—	—	—	—	—	
Gloucester . . . . .	27,663	—	—	—	—	—	—	—	
Taunton . . . . .	27,093	12	2	8.66	—	8.66	—	—	
Waltham . . . . .	20,877	6	3	16.66	16.66	—	—	—	
Quincy . . . . .	20,712	—	—	—	—	—	—	—	
Pittsfield . . . . .	20,447	5	3	—	40.00	—	—	—	
Everett . . . . .	18,578	4	0	—	—	—	—	—	
Northampton . . . . .	16,738	—	—	—	—	—	—	—	
Newburyport . . . . .	14,564	1	1	—	—	—	—	—	
Amesbury . . . . .	10,920	—	—	—	—	—	—	—	

Deaths reported 3,417: under five years of age 1,827; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fever) 1,100, consumption 278, acute lung diseases 209, diarrheal diseases 893, diphtheria and croup 74, typhoid fever 48, whooping-cough 40, measles 19, scarlet fever and cerebro-spinal meningitis 9 each, malarial fever 5, erysipelas 3.

From whooping-cough New York 11, Philadelphia 7, Chicago 6, Providence 4, Baltimore and Washington 3 each, Cleveland 2,


Boston, Nashville, Lowell and Waltham 1 each. From measles New York 10, Philadelphia 4, Chicago 2, Boston, Cleveland and Washington 1 each. From scarlet fever New York 6, Chicago, Baltimore and Boston 1 each. From cerebro-spinal meningitis New York 6, Baltimore 2, Boston 1. From malarial fever New York 4, Boston 1. From erysipelas New York, Boston and Cambridge 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending July 4th, the death-rate was 17.8. Deaths reported, 3,691; acute diseases of the respiratory organs (London) 162, diarrhea 305, measles 175, whooping-cough 111, diphtheria 64, scarlet fever 36, fever 28, small-pox (London) 1.

The death-rates ranged from 9.2 in Derby to 27.5 in Gateshead: Birmingham 15.7, Bradford 16.9, Brighton 12.1, Croydon 9.7, Hull 15.1, Leeds 17.4, Liverpool 21.3, London 18.3, Manchester 20.6, Newcastle-on-Tyne 17.9, Nottingham 15.4, Portsmouth 16.3, Sheffield 18.6, Sunderland 21.2.

### METEOROLOGICAL RECORD

For the week ending July 11th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. •		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...5	29.81	62	67	57	94	87	90	N.	S.E.	6	8	O.	O.	.32
M...6	29.04	60	63	58	89	100	94	E.	E.	8	10	O.	O.	
T...7	29.93	60	63	58	98	98	97	N.E.	N.	6	2	R.	R.	.58
W...8	30.09	68	76	59	63	72	67	W.	S.W.	8	10	F.	O.	
T...9	30.23	76	85	66	61	81	71	W.	S.	4	10	O.	O.	
F...10	30.20	81	89	73	74	69	72	S.W.	S.W.	15	15	O.	C.	
S...11	30.03	79	86	72	76	52	64	S.W.	W.	13	8	F.	C.	
														

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threaten-  
ing; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 11, 1896, TO JULY 17, 1896.

The leave of absence on account of disability, granted MAJOR CLARENCE EWEN, surgeon, is extended one month on account of disability.

The extension of leave of absence, on account of sickness, granted MAJOR JAMES C. WORTHINGTON, surgeon, is further extended one month on account of sickness.

Leave of absence for two months, to take effect on or about July 15, 1896, is granted COLONEL ALLAS BACHE, assistant surgeon-general, Hdqrs. Dept. of the Platte.

### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 18, 1896.

R. C. PERSONS, surgeon, orders to duty at Naval Hospital revoked and ordered to continue on present duty.

H. N. T. HARRIS, passed assistant surgeon, ordered to the Pensacola Navy Yard.

S. H. DICKSON, surgeon, ordered to the "Texas."

J. M. MOORE, assistant surgeon, detached from Naval Hospital, Norfolk, and ordered to the "Texas."

A. FARENHOLT, assistant surgeon, detached from the "Monterey" and ordered to the Mare Island Hospital, Cal.

### OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE PERIOD FROM JUNE 21, 1896, TO JULY 15, 1896.

PURVIANCE, GEORGE, surgeon. To assume temporary command of Service at Philadelphia, Pa., for thirty days. July 3, 1896.

PECKHAM, C. T., passed assistant surgeon. Placed on waiting orders. July 3, 1896.

WHITE, J. H., passed assistant surgeon. To proceed from New York, N. Y., to Key West, Fla., for special duty. July 10, 1896.

VAUGHAN, G. T., passed assistant surgeon. Granted leave of absence for thirty days. July 7, 1896.

STIMPSON, W. G., passed assistant surgeon. To assume temporary command of Service at Port Townsend, Washington. July 3, 1896.

SPRAGUE, E. K., assistant surgeon. To proceed from Boston, Mass., to New York, N. Y., for temporary duty. July 10, 1896.

WICKES, H. W., assistant surgeon. Granted leave of absence for twenty-seven days. July 8, 1896.

GREENE, J. B., assistant surgeon. To proceed from Baltimore, Md., to Port Pleasant, N. J., for physical examination of crews of Life Saving Service. July 13, 1896.

JORDAN, W. M., assistant surgeon. To proceed from Birmingham, Ala., to New York, N. Y., for temporary duty. July 13, 1896.

### PROMOTIONS.

NYDEGGAR, J. A., assistant surgeon. Commissioned by the president as passed assistant surgeon. July 7, 1896.

STEWART, W. J. S., assistant surgeon. Commissioned by the president as passed assistant surgeon. July 8, 1896.

### APPOINTMENT.

JORDAN, WILLIAM M., of Alabama. Commissioned by the president as assistant surgeon. July 7, 1896.

### RECENT DEATHS.

DR. LELOIR, professor of dermatology in the Lille Medical Faculty, died recently in Lille, France, at the age of forty-two.

GEORGE C. SHATTUCK CHOATE, M.D., for ten years the Superintendent of the Taunton Insane Asylum, died at Pleasantville, N. Y., June 26th, aged seventy years.

### BOOKS AND PAMPHLETS RECEIVED.

Albany Medical College Catalogue, 1895-96 and Announcement, 1896-97.

Transactions of the American Medico-Psychological Association, Vol. II, 1896.

The Influence of the Catheter in Causing Vesical Irritability. By Edgar Garceau, M.D., Boston. Reprint. 1896.

Hydro-Galvanism of the Urethra. By Robert Newman, M.D., New York. Reprint. 1895.

Announcement of the Thirty-eighth Annual Session of the Long Island College Hospital, Brooklyn, N. Y. 1896.

Orthotherapy in Diphtheria. By E. Fletcher Ingals, A.M., M.D., Chicago. Reprint. 1896.

Ninth Annual Report of the Board of Health of the City of Newport, R. I., for the year 1895, with Mortuary Statistics for 1893 and 1894.

Reduced Period of Intubation by the Serum Treatment of Laryngeal Diphtheria. By Edwin Rosenthal, M.D., Philadelphia, Pa. Reprint. 1896.

Proceedings of the Twenty-third Annual Meeting of the Association of the Alumni of the Albany Medical College, Medical Department, Union University, held April 14, 1896.

When and How to Cure the Uterus. By Christopher Martin, M.B., Edin., F.R.C.S., Eng., Surgeon to the Birmingham and Midland Hospital for Women. Reprint. 1896.

Annual Catalogue and Announcement of the Woman's Medical College of the New York Infirmary for Women and Children. Thirty-first year. June, 1896.

The Pathology of the Contracted Granular Kidney and the Associated Cardio-Arterial Changes. By Sir George Johnson, M.D. Lond., F.R.C.P., F.R.S. With twenty-nine illustrations. London: J. & A. Churchill. 1896.

Catalogue of the University of Pennsylvania. Fasciculus of the Department of Medicine, 1895-96. Announcements for Session 1896-97. 131st Annual Session. Second edition. Philadelphia. 1896.

A System of Medicine. By many writers. Edited by A. Clifford Allbutt, M.A., M.D., LL.D., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, etc. Volume I. New York: Macmillan & Co. Limited. 1896.

Burdett's Hospitals and Charities, 1896, being the Year Book of Philanthropy. By Henry C. Burdett, Author of "Hospitals and Asylums of the World," etc. London: The Scientific Press. Limited. New York: Charles C. Scribner's Sons. Boston and Chicago: D. C. Heath & Co.

## Lecture.

OUR PRESENT KNOWLEDGE OF THE INTERSTITIAL SECRETION OF THE THYROID GLAND.<sup>1</sup>

BY JOSEPH W. WARREN, M.D.

THE observations and experiments described in previous lectures show most convincingly that the thyroid gland subserves important purposes in the life of many of the vertebrates. The evidence as to its importance is at present most satisfactory as regards the mammals. In this group the carnivorous and omnivorous animals seem to be more dependent upon the sound condition of the gland than the herbivorous. The rabbit, however, presents, according to many experimenters, such evidence of dependence on the gland in question that we may not as yet make very positive statements concerning the influence of the food.

Let us now consider briefly the theories advanced to explain the condition of thyroidless animals in which the *cachexia strumipriva* or *thyreopriva* develops.

The reservoir theory, that the thyroid regulates the flow of blood to the brain, has been revived by some recent writers (Meuli, Stahel, Waldeyer), and held to be more or less plausible. As we have already seen, this idea is at least a hundred years old, having been brought forward in 1791 by Schreger and probably still earlier by Sömmerring. The same objections are valid now that have been urged by various writers. We have no good reason to believe that any such method of blood regulation is made use of in the animal body. It is also difficult to see how any regulation of this kind could be effective, for as soon as the organ filled itself with blood the flow would go on much the same as before.

Another theory with which the names of Munk and Drobnik have been especially associated, that the *cachexia* incident to thyroidectomy is due to nerve irritation by inflammatory processes need not detain us long. In its favor little can be said save that Breisacher got certain periodical respiratory accelerations (resembling polypnea) as a result of electrical or inflammatory irritations. Against the theory are the positive statements of various observers that mere operative procedures about the thyroid do not cause typical results. The implantation experiments and the results of the injection of thyroid extracts or of simple thyroid feeding are all opposed to the theory. Where local irritation does seem to give positive results it may be urged that this acts by interfering with the secretory activity of the gland through a hindrance to the flow of blood and lymph to the gland or from it as the case may be.

The effort has also been made to establish a hematopoietic function for the thyroid. The most recent extended work in this direction has been done by Formánek and Haškovec. Anemia is unquestionably an important concomitant of the cachectic condition which we are considering but it is hard to be sure of its significance. It is not evident that there is any specific *anemia thyreopriva* and other anemias do not lead to the development of any such group of symptoms as are commonly seen in the fully developed *cachexia* of the thyroidless.

The changes observed in the post-mortem examinations are not such as may be easily used to establish a satisfactory theory. There are degenerations in the nervous system, also in various organs (notably in the spleen, liver, kidney). The loss of flesh and fat is also common, and there are peculiar changes of an atrophic character in the skin. These alterations point, perhaps, to some form of intoxication, and the chronic poisoning of a peculiar auto-infection has been held to be a sufficient explanation. The myxedema seen in man and in some animals as a result of the removal of the thyroid, and hence known as operative myxedema, presents some difficulties. This, as well as the spontaneous form of myxedema, has been held to be a kind of retrogression to a more embryonic state, with an increase of mucin in the tissues, the loss of the thyroid having removed some sort of check on this process. It is doubtful if this view will meet with the approval of the embryologists. The fact that some cases of obesity yield to treatment by thyroid feeding has led to the assumption of some analogous tissue change here.

We do not know very much about the metabolism of thyroidless animals and the disturbance of appetite which is characteristic of the state, renders such experiments exceedingly unsatisfactory. It has been observed that muscle juice from animals dying of *cachexia strumipriva* is toxic for sound animals, producing many symptoms such as are seen after removal of the thyroid. This may mean that when the toxic substances are presented too rapidly for the normal action of the gland to overcome them intoxication occurs. In favor of this view are also observations made by Fano and Zanda (1889), that when a part of the blood of dogs in full *cachexia thyreopriva* is replaced by normal salt solution a marked improvement in their condition occurs. The alleged good influence of a milk diet on thyreoprivous dogs is perhaps an additional support for this view.

It seems then exceedingly probable that the bad effect of thyroid extirpation is due to an intoxication, to some kind of an auto-infection, whose harmful influence is no longer counteracted by the normal action of the thyroid gland—by what is now frequently called its “internal secretion,” or what Burdach, sixty years ago, called its “interstitial secretion.” The effect of thyroid transplantation or implantation, together with the positive results produced by thyroid feeding or by the use of extracts, speaks for the action of the gland by means of a secretion, that is at a distance from the gland, and this is against the view that some have suggested that the toxic substances are brought to the gland and there transformed or rendered innocuous. The gland acts, therefore, not by virtue of storage or of direct blood purification.

Recent writers on the thyroid commonly attribute to Schiff the view that the thyroid is useful by virtue of some substance which it secretes. But Schiff only revives an idea which many others had already held, although perhaps with less precise notions of the process of secretion. Thus, Haller (1761) attributes the view to Ruysch, carrying it back to the end of the seventeenth century. The quotation<sup>2</sup> is as follows: “Liquorem peculiarem in ea glandula parari qui receptus venulis sanguini reddatur, quae etiam lienis et thymi sit utilitas, ipse Ruyschius autumavit.” I have not been able to examine the “epistola” to which

<sup>1</sup> A lecture delivered to graduate students of physiology at Bryn Mawr College, May 22, 1896.

<sup>2</sup> Elementa III, 400.

Haller refers. At least as early as 1835, in this century then, Burdach had ascribed a secretion to the various "vascular ganglia," and he particularly enumerates the thyroid along with the thymus and the suprarenal capsules when he says that "exacter investigations have shown that ducts of this kind (that is, efferent ducts) are not present, and that a liquid is deposited in the vascular ganglia only by interstitial secretion to be taken up again by the efferent vessels."

Allusion has already been made to the view of John Simon (1844) according to which some sort of a chemical use is made of the blood when the brain is inactive and does not need the blood.

Carpenter (1847-9) also attributed true secretion to the thyroid and other "vascular glands," "their office apparently being to withdraw certain crude matters from the blood, to submit these to an elaborating action whereby they shall be rendered more fit for the nutrition of the tissues and then to restore them to the circulatory current. . . They all show an essential correspondence with the true and recognized glands in every respect but this, that they have no efferent ducts."

Ecker too, in 1853, considered that "the function of these organs (thyroid, etc.) consists in the formation of a secretion from the blood and the delivery of the same to the blood." He also thought, in view of the richness of the secretion in protein substances and fat, that "the secretion is to be considered as a concentrated plasma, a nutritive essence, which is separated from the blood when this acquires new material and which is afterwards gradually taken up by the blood again and made use of for nutrition." These quotations make it clear that the recognition of the thyroid as a gland having an active secretory process is not of recent date.

We have also experimental evidence which shows that actual secretion, dependent upon active cell processes, goes on in the thyroid gland. It has been observed incidentally that when the extirpation of the gland is partial a certain amount of compensatory hypertrophy occurs. Details of the actual secretion as it affects the histology of the gland have been reported by various observers, especially by Langendorff, Hürthle and most recently, a couple of weeks ago, by Schmid.

It has been found that the gland may be stimulated to increased activity. Pilocarpin, which is usually so efficient in causing glands to secrete vigorously, gave also positive results for the thyroid (v. Wyss, Hürthle, Andersson) although Schmid could find no marked differences in the pilocarpinized glands. Along with the compensatory hypertrophy following partial excision an increased secretion is seen. Most curious is the experience of Hürthle who found accidentally that ligation of the bile duct, (that is, entrance of bile into the blood) stimulates the follicles of the thyroid to greater activity and the increased secretion shows itself in the histological appearance of the cells. On the other hand, electrical stimulation of the nerves of the thyroid gave uncertain or negative results to the same investigator.

On the whole what we may call the hypertrophic condition of the partially extirpated, that is, resected gland, seems to furnish the most clear evidence of the participation of the cells of the gland follicles in a secretory process. Under such circumstances some of

the cells lining the follicle are found to change their appearance and upon staining behave as though they contained a substance resembling the "colloid" material which fills up the open space of the follicles. It is held, therefore, that cell changes occur by which the "chief" cells of the follicle become "colloid" cells, and that this is analogous to the change which takes place in genuine glands elsewhere where granules of various kinds form as forerunners in some form of the secretion which the glands are known to produce. There is much uncertainty as to the way in which the "colloid" is disposed of. Langendorff has held that it is stored up—concentrated in the gland either in follicular or in lymphatic spaces where its purpose may be to purify the blood of useless or even noxious substances. Hürthle has found evidence that the follicles empty themselves into the numerous interfollicular lymph spaces. This takes place for pure colloid secretion through paths forming as intercellular channels as occasion arises. Under some circumstances the secretion process leads to a sort of softening or deliquescence of a part of the follicle wall, so that an opening is made into the lymph spaces, such breaking down of the follicular structure being the usual outlet for the secretion, according to Langendorff and his pupil Schmid. Schmid was unable to demonstrate Hürthle's intercellular duct spaces by any injection of suitable solutions (ferrocyanide of sodium, indigo carmine). It has often been suggested that the secretion should be sought in onflowing blood or lymph but no one has as yet made any definitive experiments in this direction.

It is important to inquire what is the action of thyroid feeding or thyroid extracts on the metabolism. There are reports by various observers of myxedema cases (Mendel, Napier, Ord, Vermehren). In general they note a distinct diuretic action and an increase of N-excretion, apparently as urea, and determined by variably exact methods. The experiments on healthy men also show a well-defined increase of the nitrogenous output and this does not seem to be lessened by a large input of carbohydrates as the normal nitrogen excretion is. The effect of thyroid feeding or of the injection of extracts on animals is not uniform in the reports. A tentative explanation of this will be found below. Ewald (1887) injected fresh thyroid juice of dogs into sound dogs. This caused an "apathy" which lasted one and a half to two hours. Last year Georgiewsky reported some remarkable results of the action of ox thyroids on dogs and rabbits. He notes a high degree of tachycardia, with polydipsia, polyphagia and polyuria. Body weight diminishes, the nitrogen excretion is much increased and some sugar was found in urine after a week or ten days. On the other hand, Edmunds (1895) fed sheep thyroids to sound dogs and injected extracts into sound monkeys without visible effect.

The most definite results are those given by Roos\* for feeding a dog with thyroids while sound and in fairly good nitrogenous equilibrium and again after the thyroid had been removed: "The thyroid substance in large doses causes in a healthy animal (dog) an increased secretion of nitrogen (much more than is introduced in the substance fed), of sodium chloride, and of phosphoric acid. The increased excretion of chlorine lasts but a short time (two or three days) and then sinks rapidly below normal, while the increased

\* *Zeitsch. f. physiol. Ch.*, 1895, xxi, 19.

output of nitrogen and phosphoric acid continues longer. . . . After loss of the thyroid gland the action of thyroid feeding on the excretion of nitrogen and chlorine was still more marked, while the excretion of phosphoric acid remained much behind the normal figures." There was also a distinct diuretic action and the body weight sank steadily. No temperature record was kept. Evidently a marked transformation of nitrogenous (albuminous) substance had been caused and also of fat tissue, since the loss of body weight is greater than would correspond to the destruction of albuminous material.

The alteration in the excretion of phosphoric acid is very striking. Feeding thyroids to a normal dog increases the excretion much, while loss of the thyroid gland diminishes the excretion by nearly one-half, and the loss is not made good by thyroid feeding in this state. Obviously some profound influence on the phosphoric acid metabolism is involved. It is not clear, however, whether we are dealing with a disturbance of the transformation and excretion of the phosphates — with a kind of phosphoric acid retention (and toxic action?) — or with an inability to assimilate the phosphates. Lack of assimilation might help to explain some peculiarities of cretinism and of myxedema (delay of bone growth, mental dulness). Roos recalls that Kocher found Basedow's disease much improved by the administration of sodium phosphate. The disease may be due to excessive activity of the thyroid in contradistinction to its diminished action in myxedema. In this connection it may be noted that Ducceschi has recently found that in the blood of thyreoprivous dogs the percentage of globulins and albumins shows changes from the normal and variations in the different stages of the cachexia. He holds this to indicate incomplete or abnormal katabolic processes which are the basis of the auto-intoxication.

The effort has also been made to find the actual substance on which efficient thyroid feeding or the activity of the extracts depends. The various "thyroidins" are, of course, only more or less purified, or merely more or less concentrated extracts, and do not in any proper sense represent the "active principle" although they must naturally contain it, or them, to be really potent.

Notkin says that he has prepared a chemically pure body from the thyroid of oxen, sheep, swine and dogs. He calls it "thyreoproteid." This substance will produce a chronic intoxication having much resemblance to the condition which develops after excision of the thyroid. Notkin views the thyreoproteid as a product of the metabolism which collects in some way in the thyroid gland and is there transformed or rendered innocuous by some "ferment" of the gland. Whatever the nature of this thyreoproteid may prove to be, it evidently is not the substance on which the action of the thyroid itself depends.

Late last year Fränkel extracted a substance from the thyroid which he held to be the physiologically active constituent and named "thyreo-antitoxin." This substance is said to have the composition  $C_8H_{11}N_3O_5$  and is thought to be a guanidin derivative. It is extractable by alcohol or acetone after removal of the albumins and the glutin. The injection of the thyreo-antitoxin is said to improve the cachectic state of thyroidless cats but not to prevent their death. There is good reason for supposing that this too is not the important product of the gland and in some more re-

cent publications Fränkel appears to admit this or at least to be in doubt.

What will probably prove to be the most important step in this line of discovery has been taken by Baumann and Roos at Freiburg. They have found a substance of very peculiar and interesting character which seems to be the substance on which the efficiency of the gland in combating myxedema and other conditions depends. It is, however, quite possible that the thyroid forms other active compounds also — or contains them.

As a test of their success in finding an active substance, Baumann and Roos made use of the experience that most strumæ (goitres) respond very rapidly to treatment with an active thyroid or extract. Thus the use of such material for a few days may be expected to give positive results by a measurably distinct change in the size of the thyroid swelling or by an alteration of its character (softening). Roos had shown that aqueous extraction and boiling takes out active substances but does not, even upon repetition, exhaust the gland. It was also shown that dry thyroids may be extracted for a whole hour by hydrochloric acid of five to ten per cent., and this extract, when neutralized, concentrated and dried, forms an active powder, which under the circumstances can hardly contain an enzyme.

After working over much gland material Baumann was able to obtain the active ingredient in a simplified form. When gland substance is treated by prolonged boiling with dilute sulphuric acid (ten per cent.) much of it passes into solution. The active principle is not destroyed by this procedure but is suspended in the solution in the form of fine flakes which settle out when the liquid is cooled. A small portion passes into solution, the amount varying with the length of time that the acid treatment is carried on. This too, may be obtained, partly by simple neutralization, partly by extraction of the residuum with hot alcohol. Further purification by alcohol and by careful extraction with petroleum ether is necessary to remove fats, fatty acids and other substances.

The resulting material is a brownish powder insoluble in water and soluble with difficulty in hot alcohol. It dissolves readily in diluted caustic alkalies, and may then be precipitated by acids. Strong alkalies seem to have a gradually destructive action. The amount of this substance is 0.2 to 0.5 per cent. of the weight of the fresh gland. It contains a small quantity of phosphorus, about 0.5 per cent, in an organic combination and about ten per cent. of iodine. To it the name of "thyrojodin" has been given, and it is prepared for the market by the "Farbenfabriken vorm. Fr. Beyer & Co." in Elberfeld. The iodine is in some firm combination whose nature is not yet definitely known. Alkalies or sodium amalgam break up the compound only gradually.

It is not clear in what form thyrojodin is present in the gland. Evidently it is not altogether free, for water and glycerine extracts are not as active as the fresh glands. Glycerine extracts are rather more active than those made with water, but even triple extraction by boiling with alcohol does not remove all.

Other methods extract the thyrojodin more completely and throw some light on its relations to the gland. Artificial digestion with 0.3 per cent. HCl. for two days at 50° C., removes nearly everything but the thyrojodin and with little loss of this. Further



purification may be carried on as above. Still more satisfactory is the repeated extraction with a dilute salt solution (0.75 per cent. NaCl) which takes up all the iodine compounds of the gland or very nearly all. From such a solution a globulin may be precipitated by dilution and by a stream of CO<sub>2</sub> or by saturation with magnesium sulphate. The globulin contains iodine, and thyroiodin may be separated from it by boiling with sulphuric acid. The previous filtrate (after the removal of the globulin) gives on boiling, after acidification with acetic acid, a large precipitate of albumin which also contains iodine and also yields thyroiodin on artificial digestion or on boiling with dilute sulphuric acid. The final filtrate is free from iodine. Thyroiodin is then present in the thyroid gland in small amounts in a free state; by far the larger part is united to an albumin ("thyroiodalbumin") and a smaller part is joined to a globulin ("thyroiodglobulin"). The existence of these compounds presumably explains the variable quality of the aqueous and glycerine extracts.

The thyroiodin seems to be active as a substance and not merely by virtue of its content of iodine. Given three or four times in doses of 0.001 gm. it has a positive and distinct action on goitrous thyroids—an effect which the actual amount of iodine (that is, 0.0001 gm.!) is not known to produce. The action of thyroiodin is apparently even more rapid than that of the fresh gland. This is explicable if we suppose the thyroiodin to be set free but slowly by the digestive processes and that putrefactive processes in the intestines (resembling the action of sodium amalgam) may render some of the thyroiodin inert. If thyroiodin itself be given we may suppose the absorption to be more rapid and that putrefactive changes will be avoided.

Baumann maintains that thyroiodin is able to produce all the results which are considered characteristic of the therapeutic uses of thyroids: (1) goitres are diminished in size; (2) the metabolism is influenced in a similar way; (3) toxic action of large doses; (4) specific action on myxedema. Leichtenstern and Ewald report positive results for myxedematous cases. Hennig and Grawitz used it successfully in treating obesity. Treufel and Grawitz found the nitrogenous excretion markedly increased with variable results as to the diuretic action of the compound.

The amount of iodine in the thyroid of the sheep is apparently subject to considerable variations and seems to differ in different localities. The variation is reported to be at least from 0.26 to 0.44 mg. for 1.0 gm. of fresh gland substance. The thyroid of the pig also contains iodine but the quantity is thought to be smaller. Admitting the thyroiodin to be the active substance, these variations suggest an explanation for the discrepancies in the results of some thyroid feedings. It is important to note that feeding with potassium iodide or with iodoform causes a material increase in the amount of iodine in the gland. The human thyroid also contains iodine and the amount was apparently less in two goitrous thyroids which Baumann was able to examine. In his earlier communication Baumann reported that the thymus of an ox yielded no iodine by this method of examination but he has quite recently found a very small quantity in the thymus of the calf.

While we may admit that the question is not altogether cleared up in its practical aspects we must con-

sider the discovery of thyroiodin to be of the utmost theoretical importance. It shows not merely that the thyroid gland forms or contains a definite substance whose significance and value we can at present only guess at, but it shows also that a neglected element, iodine, probably plays an important and hitherto unsuspected part in the metabolism of the animal body. If you look through the books you do not find any suggestion that iodine is even found normally in the body of the higher animals. You will find it mentioned as a constituent of the sea-water and of certain sea-weeds. You will find certain invertebrates enumerated as containing iodine and also certain fishes. Even here the iodine is usually spoken of as though it were a more or less accidental thing, something found in the body merely because these animals live in the sea and on substances containing iodine. You will nowhere find any intimation that iodine may be supposed to be of any real importance even to these lower animals. And yet if we may accept the experiments of Baumann, iodine is present in the bodies of many of the highest vertebrates, perhaps in all of them. It is present, too, not as a simple accident of nutrition or transiently—a mere incident of the metabolism—but constantly, and, despite the small amount, as an integral factor in many of the vital processes of the body, and essential to the well-being of the animal.

## Original Articles.

### PERNICIOUS ANEMIA: A STUDY OF FIFTY CASES.

BY RICHARD C. CABOT, M.D.

OF the 50 cases of which this paper is an analysis, 33 came under my own observation either in private practice or at the Massachusetts General Hospital by the kindness of the visiting physicians; the remainder are taken from the records of the Hospital. I have examined the blood in 35 cases, slides being furnished me by Dr. Geo. B. Shattuck and Dr. H. F. Hewes in cases under their care which I did not see myself. One case I saw and examined at the Boston City Hospital by the kindness of Dr. Henry Jackson.

My very hearty thanks are due to all these gentlemen for the opportunities they have afforded me, and I am also particularly indebted to Drs. F. C. Shattuck and R. H. Fitz for opportunities of seeing private cases with them.

**Diagnosis.**—The diagnosis in these cases rests on the following evidence:

	Cases.
1. Autopsy (as well as other evidence)	8
2. Typical etiology, symptoms, signs, blood examination, and course (ending in death)	17
3. Typical etiology, symptoms, signs, blood examination and course, but not known to be dead	6
4. Typical etiology, symptoms, signs, course (ending in death), but blood examination lacks an account of stained specimens	9
5. Typical etiology, symptoms, signs, but not known to be dead, and blood examination lacks an account of stained specimens	6
6. Typical etiology, symptoms, blood examination and course (ending in death) but slightly atypical in physical signs	1
7. Typical etiology, symptoms, signs and course (ending in death) but blood slightly atypical	1
8. Typical etiology, symptoms, signs and course (ending in death) but blood examination imperfect <sup>1</sup>	2
	50

<sup>1</sup> One of these cases was diagnosed as pernicious anemia by W. S. Thayer, from the stained specimen, but no count was recorded. In the other we have only an examination of the fresh blood (*vide infra*, p. 17).

The blood was atypical in two of the autopsied cases, further mention of which will be given below.

(a) "Typical etiology" is discussed below.

(b) By "typical symptoms" I mean the following: Muscular weakness, anorexia, nausea and vomiting, diarrhea or constipation, headache, vertigo, tinnitus and faintness, short breath, palpitation, edema and serous effusions, hemorrhages (retinal or other); also the absence of pain (except headache) and of other symptoms pointing to any other disorders.

(c) "Typical signs" in pernicious anemia are an extreme pallor of the skin and mucous membranes, a well-preserved fat layer, "hemic" murmurs over the base of the heart, fever (99°-100°), normal urine and the absence of any positive signs of any other disease.

(d) "Typical course" means a gradual and insidious onset, a gradual advance of the disease checked often by periods of very great temporary improvement, but ending in death within four years, usually sooner.

(e) For "typical blood examination" in detail see below. Roughly speaking it means: red cells near 1,000,000, no leucocytosis, nucleated red cells, a minority of which are of the normoblastic type.

I regard the diagnosis as reasonably certain in all the above 50 cases. The details of those whose diagnosis might be seriously doubted will be given in the course of the article.

**Definition.** — By pernicious anemia I mean a profound and almost invariably fatal anemia without adequate known cause, characterized by an extreme diminution in the number of red blood-cells, and usually by other changes in the blood, as well as by an absence of emaciation, and a tendency to spontaneous temporary improvement followed by relapse.

**Etiology.** — By "typical etiology" I mean the absence of any causal factor adequate to produce so grave a disturbance; not the entire absence of any events or diseases which have been mentioned in connection with pernicious anemia and other anemias, but the absence of any cause which could reasonably be supposed sufficient to account for the symptoms.

Thus the presence of malaria, hemorrhage, parturition and chronic dyspepsia in the history of some of these cases does not prevent their being classed as primary, in distinction from secondary anemias, but it has not seemed that in any one case the severity of these antecedents was such as to be able to produce so serious a disease.

In the etiology of pernicious anemia the important factors are the unknown factors, while in secondary anemia the cause to which the anemia is secondary is of itself sufficient to produce the symptoms.

It is in this sense that the cases here analyzed are considered to be "primary."

As a matter of fact, none of the cases are known to have lived over three years from the time when they first came under observation, but the diagnosis does not depend upon a fatal result. Cases apparently similar in other respects have recovered after expulsion of intestinal parasites, and there are probably a few out of the many reported cures in pernicious anemias not due to intestinal parasites, where both diagnosis and outcome are correctly reported.

**Age.** — The larger number of cases have come on in middle life — few at either extreme of age, as is shown by the following table:

Unknown . . . . .	2
Under 10 . . . . .	1
Between 10-20 . . . . .	3
Between 20-30 . . . . .	3
Between 30-40 . . . . .	9
Between 40-50 . . . . .	14
Between 50-60 . . . . .	11
Between 60-70 . . . . .	5
Between 70-80 . . . . .	2

**Sex.** — Of the 50 cases there were 33 male and 17 female.

**Occupation.** — There was nothing significant in the occupations of these cases. They included the well-to-do as well as the poorer classes, there being among them a lawyer and the wife of a prominent physician, as well as day-laborers and farmers. The kinds of work are almost as numerous as the cases.

**Nationality and Residence** are likewise insignificant; 38 of them lived in Boston and its vicinity.

**Parturition, Pregnancy and Lactation** appear to have played a part in only one of the cases; in this the symptoms came on nine weeks after parturition. But in three of the 17 females the symptoms date from the menopause. There was a history of a mild attack of malaria in three, in one eight years before, in another ten and in another twenty. Syphilis in none. Intestinal parasites were not observed in any, though special examination for them was made only in eleven. Atrophy of the gastric tubules was not found in any of the autopsies, nor was it searched for through tests of the gastric chemistry in any case. From the symptoms it did not seem a likely factor in any case, for in the digestive disturbances which formed part of most of them, there were always quiescent periods when food seemed to be fairly disposed of.

**Hemorrhages**, exclusive of those from the retinal vessels, occurred in some part of the course of 17 cases. In twelve of these the hemorrhage took place after symptoms of profound anemia were already established, while in five the hemorrhages occurred before the anemia was marked. In no one of these five, however, were the hemorrhages greater in amount (so far as one could judge from the history) than frequently occurs without causing any considerable or long-standing anemia.

Of the hemorrhages occurring after the advent of other symptoms of profound anemia

2 were from the nose alone.
3 were from the nose and gums.
2 were from the gums alone.
2 were from the nose, gums and subcutaneously (purpura).
1 was from the nose and stomach.
1 was from the stomach, gums and urinary tract (hematuria).
1 was from the bowel alone.

Two cases gave a history of bleeding from piles most of the time for three and a half years, and "several" years respectively. One case had had purpuric spots on and off "for years" in various parts of the body. One case (a girl of nineteen, single) gave a most circumstantial account (corroborated by her father) of having had each spring for four years a period of purpura, bleeding from gums and nose, weakness and dyspnea — lasting from one to three months, and ending in complete recovery. The attack which I saw occurred, like all the others, in March, and she died in October. One case had slight bleeding from piles off and on and once a slight hematemeses.

**Onset.** — In all but one case the onset has been notably insidious. Patients cannot name the day or even the month when the illness began. In the one

case which forms the exception to this rule, the patient's symptoms (weakness, short breath and palpitation) were stated by him to have come on suddenly and without known cause six weeks before. In one other patient the symptoms could be dated fairly definitely to a period ten weeks before he entered the hospital.

As a rule, the symptoms have not seemed serious until a few weeks before the patient presents himself for advice. "Getting sallow for four or five years," "Gradually getting weak these last two years," "Running down for a year and a half," are samples of the accounts given by patients of their symptoms.

In nine cases there was a clear history of one or more of the periods of marked and unaccountable improvement, followed by equally unexplained relapse which will be mentioned again later as very characteristic of the disease.

The insidious onset makes it impossible to set down accurate figures as to the ordinary duration of the disease.

**Symptoms.**—(1) In every case (except two), in which the order of symptoms was carefully noted, namely, in 38 out of 40 cases, it was the *pallor* which first called the attention of the patient or his friends to the fact that he was not well. In several cases the friends thought the patient was getting "jaundiced," showing that the yellowish tint is a sign of early appearance. Besides being the earliest, this symptom is the most common of all, being specially noted in each and all of the cases. In all it is a distinctly *yellowish* tint that was noted, and not a simple pallor or a muddy, cachectic complexion. The records usually describe it by the conventional term "lemon yellow" but in the 33 cases seen by the writer the color has been really much lighter than a lemon. It is nearer the color of a grape-fruit, and is notably even all over the face without variations on the cheeks or forehead. One had a red nose. The color is not so white as in advanced Bright's disease, but is even and varies less in different parts of the face. It is this evenness rather than a difference in the color itself that distinguishes it from the skin of a mild case of jaundice. The conjunctivæ are usually white enough to throw the question of jaundice out, but in four cases there was noted a slight yellowish tinge in the conjunctivæ which made examination of stools and urine helpful in excluding icterus. The patients, so far as I have observed them, cannot or do not blush or change color, as chlorotics or nephritic cases often do.

It is then the quality rather than the degree of the pallor that is most distinctive in the skin. It is in the mucous membranes of lips, gums and palpebral conjunctivæ and in the nails that the degree of pallor is greater, in marked cases, than in even the severest forms of secondary anemia or chlorosis.

(2) Next to the pallor the earliest symptoms in this series have been *muscular weakness* and *shortness of breath*, the two being closely associated and hardly to be distinguished from each other by the patient as to priority. These symptoms have been very prominent in the history of most of our cases. Marked muscular weakness has been noted as an important symptom in all but three cases, and in these it is not noted as absent but simply not mentioned. Dyspnea is noted as absent in four cases only—present in 36, and not mentioned at all in 10. Sooner or later the patients

have been confined to bed by one of these two symptoms in all cases. *Palpitation* is noted as present in 19, absent in 10, and no note as to it in 21. *Fainting* was noted as a symptom in nine cases and *vertigo* in 23, out of 35 in which there is any note on the subject; *tinnitus* is specially noted in only five, but was noted absent in only three. In two cases vertigo and faintness were (after pallor) the first symptoms noticed by the patient.

(3) *Loss of appetite* is a very early and a very constant symptom, although a good appetite is noted in six cases, and one patient declared that he "could never get enough," his appetite being excessive during the disease. Anorexia was the earliest symptom noted in two cases. As a rule the appetite gradually declined, subject to the temporary improvements that formed part of the regular course of the disease.

(4) *Nausea and vomiting* were present for a considerable portion of the course of 31 cases. It was often the most prominent symptom for a time, but was never persistent throughout. In eight it was present only in the later stages of the disease, and in eight it was an early symptom and disappeared later; in the remaining 15 it occurred at irregular intervals. It was usually most marked in the morning, and the kind of food seemed to make little difference. Some cases ceased vomiting under careful dieting. Other gastric symptoms such as heartburn, flatulence, eructations and pain were noted in only five cases. Their absence, however, was never noted; in the cases which the writer has watched it has seemed that these symptoms were less marked than in gastric catarrh, ulcer or cancer. The patients were not dyspeptic—they simply vomited. This impression, however, is based on only a few cases, there being very little evidence for or against it in the records.

(5) *The Bowels.*—Diarrhea was noted in 12 cases, constipation in 13, both in 4 (alternating). The bowels were regular in 13 cases; no note made in 8.

Diarrhea was the most prominent symptom of all in four of the cases. The discharge was noted as containing blood in four, otherwise no note as to their character. In the four cases in which the diarrhea was so prominent, it proved to be practically unaffected by any treatment save opiates, and stopped of itself at last.

*Edema of the Feet* has been noted at some period in 24 of the cases, absent in 17 and no note in 9. It has usually been rather a late and not a prominent symptom and has not, therefore, been discussed with the other and more prominent circulatory symptoms. It has usually disappeared on confinement of the patient to bed.

*Ascites* was noted in two, hydrothorax in three cases. Edema of the face was noted in four cases as a late symptom.

*Headache* was observed in 11 cases, and was a prominent symptom in two; in 21 it was absent, and in 17 there was no record. With this exception and that of the lightning pains of a probable complicating tabes noted below, the entire absence of pain was a notable feature in the clinical history of these cases.

*Nervous System.*—Symptoms pointing to the organic nervous system were noted in 20 cases. Paresis of extremities was noted in two cases. Numbness of extremities was a feature in eight cases, in five of which there was also motor weakness and pain or tenderness along nerve trunks. The knee-jerks were

absent in four cases, in one of which shooting pains were the patient's chief complaint. In another case shooting pains with blurred sight and marked constipation were noted, there being no record of the condition of the reflexes. Atrophy, weakness and numbness of the left arm and leg, with tremor of the left hand, was a feature of one case. A spastic gait with increased reflexes and clonus was noted in another. Finally in two cases, both of them women, a total paralysis of all extremities, with loss of control of sphincters and complete helplessness, came on towards the end of the disease.

Aphasic seizures were noted in two cases — in one case occurring only once and lasting a few hours, and in the other repeated three times and preceded by an aura like that of epilepsy. This same case had once complete and sudden coma for two hours, the details of which were not known as it occurred at the patient's home. In one case there came on while in the hospital a sudden inability to swallow, the face being drawn to one side and a slight paresis of the arm and leg on the other, which gradually passed away in the course of the next three days.

*Mental Symptoms* were chiefly confined to dulness increasing gradually into a stupid, semi-comatose condition which occurred during the last few days of life in most of the cases. This was preceded or accompanied by delirium (especially at night) in four cases; in one, very active noisy delirium. In two cases there were delusions and hallucinations of sight and hearing for months before death.

*Death* was gradual and slow in all the fully recorded cases except one, of which further mention will be made later. It is worth noting that of the 17 female cases nine, or over one-half, showed symptoms referable to lesions of the brain, cord, or peripheral nerves, while of the 33 male only eleven, or one-third, showed such symptoms.

*Physical Examination.* — The color of the skin and mucous membranes has already been remarked on. A notable smoothness of the surface of the tongue is recorded in five cases. The gums bled easily in 14 cases and possibly in some of the rest in which no record was made on this point. In one case the tissues of the mouth were also in a very unhealthy condition, and repeatedly broke down in small ulcerating patches.

Undulation or visible pulsation of vessels in the neck is recorded in all of the twelve cases in which there is any record at all upon the subject. The absence of emaciation makes this symptom worthy of note.

The condition of the *pulse* is recorded in only six cases, in three of which the note is "full and soft" while in the others there is mention of the resemblance to the Corrigan or water-hammer quality. In two of these cases a short sharp sound in the peripheral arteries was observed, although there was not thought to be any valvular lesion. In one a capillary pulse was observed in the lip.

The *heart* was examined in all cases. In 35 there is a record of soft systolic murmurs, loudest at the base but heard all over the cardiac area and presumably "hemic." In two cases a double murmur at the apex was observed, with also a "harsh" murmur at the base in one. In one case the systolic murmur was heard also in the left axilla and back. The absence of enlargement is noted in all but two cases,

where there was some increase in the area of dulness both to right and left.

The *lungs* showed the moist râles of passive congestion in five cases for a greater or less period. Hydrothorax occurred in three, as has been mentioned. The liver came two fingers' breadth below the ribs in five cases, in two of which its area of dulness likewise extended up to the fourth rib: In one case enlargement upward to the fourth rib is noted without enlargement downward, and in one case a considerable and palpable enlargement of the liver was recorded without further detail. Total, seven cases of enlargement out of 44 in which this point is noted.

Enlargement of the *spleen* was observed in five cases, the organ being palpable in three of them; the area of dulness in the fourth case was six inches by four inches, and "enlarged" in the other. In one of the cases where it was palpated, it reached one and one-half inches below the ribs, in another three and one-half.

*Tenderness* over the *long bones* was observed in only six cases and noted as absent in 35.

The notable *preservation of the subcutaneous fat* is specially recorded in 40 cases. More or less emaciation in seven, no record in the others.

*Urine* was examined in all cases. Its color was normal or pale in all but three cases, and in these only a single examination is recorded, so that we do not know whether the high was permanent or transitory. The specific gravity was low, averaging 1.015. Albumin, sugar and casts were absent in all but two cases and in these two, both of whom were over fifty years old, there was nothing more than is the rule in well people of that age. Pathological urobilin was specially looked for in three cases and found absent. The statement of Hunter that a high-colored or dark urine is a frequent symptom is not borne out by these cases.

The eyes were examined in eight cases, and retinal hemorrhages found in five. One patient said he had been entirely blind for twenty seconds on one occasion. Another complained of a reddish mist over everything he saw. In the other cases no symptoms referable to the eyes are recorded.

Fever was present in all of the 40 cases in which observation on this point was noted, 99° to 100° in 14, 100° to 101° in 13, and irregular in the others, seldom reaching over 103°. Chills, with chattering teeth, sharp rise of temperature and sweating were present without known cause in three cases — a few times in the course of each.

(To be continued.)

## THE PULMONARY INVALID IN COLORADO.<sup>1</sup>

BY CARROLL E. EDSON, A.M., M.D.,  
Physician to Out-Patients, Boston City Hospital.

CERTAIN features in the life of a pulmonary invalid in Colorado have impressed themselves deeply upon me during a year and a half's residence in that State. They are non-statistical, every-day facts. They can be appreciated fully only by actual experience or observation; but they are of such direct and vital importance to the well-being of the invalid that I wish to bring them to your careful attention.

<sup>1</sup> Read at the Annual Meeting of the Massachusetts Medical Society, June 10, 1896, and recommended for publication by the Society.

The meteorological statistics of Colorado climate which you are acquainted with are chiefly those of Denver and Colorado Springs; but please remember that Colorado is nearly four hundred miles long by two hundred and eighty miles wide, and varies in altitude from three thousand to fourteen thousand feet above sea level. Short distances, particularly in the invalid belt, along the eastern slope of the mountains from Pueblo to Fort Collins, make marked difference in the weather conditions. This is especially so about Colorado Springs, where the isolated mass of Pike's Peak acts as a storm centre and meteorologic eccentric of considerable moment. Arapahoe County, of which Denver is the seat, is alone as large as Massachusetts and of about the same shape. Parts of the State especially attractive to new-comers because of game or gold-mines, are entirely unsuitable for an invalid. Do not then think, from your knowledge of general sun and humidity statistics, that it suffices to send a patient simply to Colorado, to settle where he may please.

The two factors most essential to a successful use of Colorado climate for pulmonary tuberculosis are these: early diagnosis, with prompt exile; and, especially, medical control of the case from the start in the new climate. The importance of the first, and the great advantage of climatic therapeutics in the early stages of pulmonary phthisis, the malarial stage, if I may so call it—of debility, slight febrile movement, a quick pulse and few or dubious signs on chest examination—cannot be insisted upon too strongly. It is not my purpose, however, to discuss here the question of climate or altitude. I assume throughout this paper that the invalid has been sent to Colorado as the place best suited for his case; and by *invalid* I mean a person sent to Colorado because of tubercular disease, no matter how slight or localized the invasion, or how little impaired his general health.

Let me only say that Colorado as a last resort, when the patient has gone steadily from bad to worse in Florida or Saranac or Asheville, is very different from Colorado at the start. As Fisk says: "There should be no more delay in the wise selection of climate than in the early diagnosis of the disease. Delay is dangerous. Tentative methods are not to be tolerated. The patient is entitled to the best that medical experience can offer."

What I wish to call particularly to your attention is the need of proper control of the patient while in Colorado. Hope alone, even *spes phthisica*, or air, even that of Colorado, if misused, will not cure tuberculosis. Many patients, arrived in Colorado, act, sometimes it must be said under advice from physicians at home, as if the end were gained and they had no more responsibility. In reality the fight has but begun, and it is a fight to the finish with the deadliest foe man has. It lasts a man as long as he lives, and is won not by some great sacrifice, even the going West, but is gained only by constant unceasing watchfulness of little things. "Every impairment of digestive power, every decline in muscular vigor, every breath of foul air breathed is a point lost in the fight in which every item, however apparently trivial, tells in the long run."

A change of climate, with no attention paid to change from confined, unhygienic occupation and injurious habits, to a proper out-door existence, is a game but half and poorly played. Proper housing

and abundant nourishing food are as essential in Colorado as in New England, and require local knowledge and careful search to find.

The city of Denver itself is often smoky, and a city anywhere is not the place for a pulmonary invalid to live in. The suburbs of Denver, however, to the east, south-east or west, are so situated in reference to land configuration and wind currents as to be entirely free from smoke, and offer as clear an atmosphere as that of Colorado Springs. The elevation is a thousand feet less than the Springs and much more agreeable to many persons. I found, myself, that although I was not troubled by the altitude at the Springs, a return to Denver gave me an immediate sense of greater energy and well-being.

Such places as Montclair, University Park, Petersburg or Berkeley are admirably suited for invalids, and are all within the street-car service. Living in Denver is less expensive than at Colorado Springs.

Many places in Colorado, and especially some of the newly recommended towns in Arizona and New Mexico, while excellently adapted atmospherically, are absolutely unfit for an invalid by the impossibility of procuring proper food. Ordinary ranch-life, with its changeless diet of soda biscuit and bacon is undesirable for a patient who needs abundant, easily obtained nutrition. A strong man can go with advantage into the wilds of the White River country after large game, but the hardship and rough diet of the trip will undo an invalid's winter gain. I have seen more than one patient seriously and permanently set back by such a summer's outing.

Let me impress most deeply upon you that an out-door life in Colorado does not necessitate roughing it, and for the patient with phthisis should not include it, no matter how slight the invasion or apparently vigorous his condition. You do not realize, perhaps, how often patients, particularly incipient cases, are sent West with the remark by the physician here, "Oh! live out of doors; have a gun; live in the saddle. So long as you gain in weight and are feeling stronger, you need not see a doctor." So they do not, till a longer ride than usual, or an exposure to a Colorado wind, with its penetrating power of tiring you out, puts a stop to their improvement and starts them "down hill." The golden opportunity for the invalid in Colorado is the start and the keeping it.

The first response of the patient to the new climate is often astonishingly quick. There is a quality in the dry, warm, gloriously sunny air which seems with each breath to efface that sense of hopeless tire so common in incipient cases. It is not uncommon to see patients gain two pounds the first week in Denver and, *under proper regimen*, to continue at that rate for a month or more. In my own case, if you will pardon a personal allusion, there was a gain of fourteen pounds in the first six weeks and an almost entire cessation of cough in the first three. With the gain in weight comes a similar and often greater gain in nervous energy. The sun and wind soon cover the pale cheek with the Colorado bronze. The patient looks and feels like a new person.

It is needless to say that the repair of invaded tissue does not keep pace with this general gain. The plump, bronzed face is not an index of the condition of the chest. It is difficult to make the invalid new-comer realize this and feel the importance of not jeopardizing the splendid start. It is the reward of

inactivity and is forfeited by overdoing. Once lost, experience shows that the climate is chary of a second gift where her first proffer of health is neglected or misused.

Out-door life, *without exercise*, is the secret of success during an invalid's early months in Colorado. The conditions of air and sun in Colorado are such as to make an out-door existence of continued inactivity possible, in a way hard to conceive here in New England.

A knowledge of local surroundings and care in the selection of a dwelling-place can make such a life possible and pleasant. A veranda open to the south and sheltered from the wind by wall or canvas screen is as important an item to secure, when house-hunting, as a well-ventilated, warmed sleeping room. It is even more so, for the patient is to spend the larger part of his time out-doors. An ideal arrangement is a recessed loggia above the ground open to the south, and so sheltered always from the wind, but giving a wide view over the plains to Pike's Peak and that unsurpassed stretch of two hundred miles of mountain range. In such a nook an invalid can sit even in the shortest cold days of winter, at least seven hours every day in clear, dry air where every breath is one of benefit.

Exercise at first should be absolutely forbidden. The elevation alone causes sufficient pulmonary work. There is chest expansion gained while the patient is wholly still. After a few weeks of quiet gain, exercise may be begun by short walks, beginning with an eighth or quarter of a mile, a distance which seems especially ridiculous in the clear air of Colorado, where objects twenty miles away do not look five. Keeping a close watch for slight rise in temperature, or digestive fatigue, the distance walked may be gradually increased. An excellent change and one agreeable to the patient, as it allows him to get farther from home and perchance out of sight of his starting-point, is driving, not in a high jolting trap, as is too often seen, but in a buggy with an easy-gaited horse, so that the patient has no drag upon his chest and arms from tight reining. From a short drive at first, the invalid can gradually come to spending the whole day in jogging about over the plains. Horseback riding is to be long deferred and most cautiously begun. It has proved a direful cause of hemorrhage or of set-back. It is difficult to make the invalid wait patiently for this, the most prejudged and attractive feature of his western life. The objection to horseback exercise applies with double force to bicycling.

This continued quietness is not the manner of life pictured to most patients on going to Colorado to regain their health, but it is the only one which will be without serious risk.

Let me now call your attention to a few details which directly affect the daily life of the invalid in Colorado.

The climate is very uniform by monthly averages, but the weather from day to day is not always at the mean. Changes from hot to cold are as abrupt and marked as with us. There is not, of course, the damp rawness of our eastern coast, but the contrast between sun and shade is more decided. I have, myself, seen in February two thermometers on my veranda, one in the sun registering 90° F., and the other not six feet off, in the shade, at 45°. The clear, dry air holds little heat, and the warmth is all in the sunshine. A

thin, cirrus cloud, no more than is grateful to the eyes, will take all the warmth from the air and remind you that after all it is mid-winter.

The open cars run all winter, and there are but few days when an invalid cannot ride in them. He should always have a travelling rug to throw across the knees. I have ridden seven miles in an open car at eight o'clock in the evening in February without discomfort; but there is no time when a patient should go far from home without a wrap, even in warm mid-day. The wind comes suddenly and strong from cloudless skies, and many days, though warm and sunny, are far too windy for an invalid to walk or ride. While the wind may last but a short time, it rises suddenly, and the exposure in reaching home may be great. The dust storms are less frequent, but more trying.

The battle against tuberculosis is one of detailed watchfulness. The lack of care which the average invalid in Colorado shows for the important little things is most surprising.

To have a few friends in for tea of an afternoon will seem to you a harmless diversion. Here is the picture as you see it in Colorado Springs. At four o'clock, when the western sun is streaming warm and bright across the mesa, the patient leaves the open air of the veranda and spends the next two hours in her room with six or a dozen friends. The air becomes warm and close, and the energy gained by the day out-doors is soon spent. The dry and the moist cough, not heard when the guests first arrive, begin later in the hour and soon become an integral part of the hum of conversation. Nature sends her flush of protest to the cheeks. Two hours of glorious possibility have been lost. They have been spent in-doors instead of out, and in-doors under bad conditions.

Young men sent to Colorado should be made before they start to feel the seriousness of the fight ahead of them and the necessity for simple living. The West is open-hearted, cordial and essentially a man's country. Club life is offered freely and may have proper use, but for an invalid to take his afternoon's rest from a morning's over-fatigue at golf or coyote coursing, upon the couch in the smoking-room of never so charming a club, is not conducive to his best recovery. Piquet and poker are excitants, but fresh air and early hours are better tonics for tuberculosis. The road to health does not lead in the way of dancing, dinner and theatre-parties. There can be no neutrality in the fight and nothing that does not count; whatever is not directly for recovery is against it.

I put this earnestly, but the recovery of health from tuberculosis is not a pastime. As Fisk says, "It is a hard business, requiring unremitting attention, constant daily care and a stout heart." The timely courage and restraining word which can come with effect from the physician only when he is in close touch with his patient, are of untold worth. From the few details even which I have called to your attention it will be obvious to you that we here cannot direct our patients out in Colorado. Do not then prejudice a quick and sympathetic accord between your patient and his new doctor by careless and erroneous speech about his new western life. Not for him are "the wild joys of living . . . the hunt of the bear." His proper conduct is a quiet, well-nourished out-door life under a physician's control. Our duty in the East, if we are to do it to the full towards the patients we send to Colorado, is:

To make earlier diagnosis.

To send our patient away at once while his chance for full recovery is best.

To send him not simply to Colorado, but to a *physician* in Colorado, unprejudiced as to manner of life, admonished to confide and obey.

## Clinical Department.

### A FEAT OF INTESTINAL PERISTALSIS.<sup>1</sup>

BY EDWARD C. RUNGE, M.D.,  
Superintendent St. Louis Insane Asylum, St. Louis, Mo.

J. D., age fifty-nine, machinist, was admitted to the asylum on October 27, 1893, by order of the St. Louis Criminal Court. On May 11th of the same year, he had killed his wife in an attack of maniacal frenzy; he was tried and adjudged insane. The record shows him to have been afflicted with delirium tremens twelve years ago, and to have been struck twice on the head with a sling-shot. He was the father of eight children, of whom one girl was an imbecile and one boy an idiot.

When I saw him first he was in a state of mild maniacal exaltation of a deeply religious nature; for days at a time he would kneel in fervent prayer. By dint of kindly talk and expressions of warm sympathy, I succeeded in gaining the poor fellow's confidence. He proved very tractable and submissive, permitting himself to be coached into reading books, carefully selected with a view of diverting his mind from its accustomed sombre haunts.

About six months ago, he developed a typical melancholia, with its profound mental agony and unappeasable agitation. This was soon followed by absolute food-refusal, which necessitated the institution of forced feeding by means of the stomach-tube. He gradually acquired to perfection the faculty of regurgitating the entire quantity of the liquid food introduced, which compelled us to resort to feeding with very small doses of the most concentrated foods. In spite of our efforts, and rectal alimentation failing, our patient began to decline rapidly. On a few occasions I succeeded in convincing him that the heavenly powers did not approve his course, and then he would, for a short time, take nourishment without compulsion. A few weeks ago, he received a visit from the pastor of the church of which he used to be a faithful member. He gave the minister a solemn promise that he would take food if he were anointed. I gave readily my consent to this procedure that seemed rather unusual for a Presbyterian, and to my surprise, D. has kept his word thus far.

Here I shall relate the incident that has led to this report. On or about March 20th of this year, preparations were made in D.'s bedroom for the feeding process. The attendant placed the tube, a medium-sized soft-rubber instrument, on the window-sill, and, while awaiting the arrival of the physician, absented himself from the room, leaving D. seemingly helpless in bed. The latter appeared for quite a while incapable of performing the slightest act spontaneously; the complete cerebral inhibition caused him to micturate and defecate in his bed. After the lapse of a few

minutes the attendant returned, and in entering the room was passed by a patient suffering with lues cerebri, who was wont to wander about in a half-dazed fashion. His glance fell upon the tube, and to his amazement, he discovered that the tube had been severed in two, and that part of the tube had disappeared. Suspicious of the above-mentioned stuporous patient, the attendant subjected him to a thorough search but without avail. A careful search about the premises of D.'s bed and the abutting yard, proved equally fruitless. Another tube was procured, and the feeding process gone through with in the usual manner. The incident was much discussed at the time, but finally relegated to oblivion as an unravellable Chinese puzzle.

Nothing of any moment developed in D.'s case, except that the passage of an offensive watery discharge from his bowels had been noticed during the last few weeks. When I examined him, his abdomen was slightly tympanitic and somewhat tender. I attributed these symptoms to fermentative changes that so frequently accompany asthenias superinduced by whatever cause. On April 20th, we were called to the ward, where the night attendant inquired whether a bougie had been inserted into D.'s rectum, and left *in situ* for a special purpose. When the cover was removed we found about six inches of rubber tubing hanging from the patient's anus, and then pulled out a piece of tubing 22½ inches long. The recollection of the almost forgotten incident of the disappearance of part of the stomach-tube, flashed upon us; the examination of the two pieces proved them conclusively to be contiguous parts of the same tube, and thus our puzzle had found an unexpected solution.

There is no question in my mind that D. had taken advantage of the attendant's absence, gathered up his energy, swallowed the tube, a procedure of the greatest ease with him, and bitten off the remainder of the tube. The motive for this action must be sought either in the desire to frustrate our attempts at interference with imagined designs of the divine powers, or what is more likely, in a sudden impulse of ending his life in such an unusual manner. The most interesting feature in this case is the passage of the long piece of tubing past the pyloric valve, and its gradual propulsion along the alimentary tract, the entire process having extended over one month. This is another illustration of the possibilities of intestinal peristalsis.<sup>2</sup>

## Medical Progress.

### REPORT ON CHEMISTRY.

BY WILLIAM B. HILLS, M.D.

#### CREATININE.

ACKERMANN's experiments,<sup>1</sup> made on a man on a mixed diet, and doing regular work, show that, in the mean, the daily output of creatinine is 1.254 grammes or 0.017 gramme per kilo. of body weight. The amount is lessened by rest.

<sup>1</sup> Here I presented to the Society both pieces of the tube; the one removed from the patient appears slightly discolored, and strongly permeated with fecal odor.

<sup>1</sup> Read (by invitation) before the City Hospital Medical Association, May 7, 1896.

<sup>2</sup> Journal of the Chemical Society, London, February, 1896, ii, 121, from Compt. rend. Soc. Biol., 1894, 659.



## URINARY PIGMENTS.

Jolles<sup>2</sup> points out that urines containing a small amount of bile-pigment will, after standing exposed to the air for several days, no longer show any bilirubin whatever, urobilin having taken its place. In some urines, pigments can be separated which give all the characters of the red and brown oxidation products obtained in Gmelin's test for bile-pigments, whilst others again yield a substance identical with cholestin, which is the highest oxidation product of bilirubin, and is, in fact, regarded as the yellow pigment of normal urine. Two classes of urobilins are distinguished from one another; pathological urobilins, which are reduction products of bilirubin, and physiological urobilins, which are oxidation products of bilirubin. These terms are used in a different sense from that in which MacMunn uses the terms normal and pathological urobilin. Among the physiological urobilins is reckoned the substance which darkens on exposure to the oxygen of the air.

The source of physiological urobilin is considered to be the bile-pigment; pathological urobilin has usually the same origin, but it can come from blood-pigment directly after extravasations of blood.

Garrod<sup>3</sup> has extracted a new coloring matter, to which the yellow color of urine may be due. The concentrated urine is saturated with pure ammonium sulphate, filtered, and to the filtrate absolute alcohol is added; this causes it to separate into two layers, the upper alcoholic layer containing the pigment. The latter, when purified, is obtained as a brown, amorphous mass. As thus obtained it is not quite pure, but usually contains a little urea mixed with it. It is very hygroscopic, and readily soluble in water and in rectified spirit, but less so in absolute alcohol, and quite insoluble in ether, benzene, or chloroform. The solution shows no absorption bands, does not fluoresce when zinc chloride and ammonia are added, and is readily decolorized by nascent hydrogen. The solution when treated with nitric acid gives the xanthoproteic reaction. Precipitates containing the bulk of the pigment were obtained with lead acetate, mercuric acetate, silver nitrate, phosphotungstic acid, and phosphomolybdic acid, but not with mercurous acetate. When a colorless solution of uric acid is added to a solution of the pigment and allowed to crystallize, yellow or brown crystals are obtained which are indistinguishable from those of natural urinary sediments.

According to Garrod and Hopkins,<sup>4</sup> normal urine contains a little hematoporphyrin (too small to account for the yellow color of the urine), but the amount is considerably increased by various conditions, especially by taking sulphonal. The causation of this condition is not yet fully explained, but it does not, apparently, imply excessive blood destruction: there is, at any rate, no correspondingly increased excretion of iron. The best way to obtain the pigment from the urine is to add sodium hydroxide, and then extract the pigment from the washed precipitate of phosphates, or to saturate the urine with ammonium chloride, and extract the pigment from the urates with a mineral acid.

## PROTEIDS OF NORMAL URINE.

Mörner's investigations show that, although

healthy human urine for practical purposes contains no proteid, yet there is proteid matter present in extremely small quantities.<sup>5</sup> For the purpose of ascertaining its nature, each experiment required many litres, often 80 or 90 litres of urine. The proteid or proteid-like material is contained partly in suspension in the ordinary mucous cloud or nubecula, and partly in solution. The research naturally, therefore, divides itself into two parts. The conclusions drawn in reference to the nubecula are the following.

The sediment of normal urine contains a specific member of the mucin group, named *urino-mucoid*, which probably originates from the mucous membrane of the urinary passages. It has the percentage composition: C, 49.4; N, 12.74; S, 2.3; and is readily soluble in ammonia. From its solutions, it is precipitable by acetic and other acids, and is only slightly soluble in excess of the acid. Its solution is levorotatory ( $\alpha_D = -62-67^\circ$ ) and it reduces alkaline copper solution slightly; after boiling with hydrochloric acid, however, it is strongly reducing. It gives the proteid color reactions. With  $\alpha$ -naphthol and concentrated sulphuric acid, it gives no carbohydrate reactions. It contains neither phosphorus (nucleic acid) nor conjugated sulphuric acid (chondroitin-sulphuric acid). In many particulars it agrees with the ovomucoid of eggs.

The soluble proteid in urine is chiefly serum albumin; but some is precipitable by acetic acid; and this part consists of a nucleo-proteid. Precipitated with the proteid, chondroitin-sulphuric acid is constantly present; this is considered to originate in the kidneys where its presence has been previously shown. The relative amounts of albumin and this acid are variable; thus there is no compound between them. In some cases taurocholic acid is present in small quantities.

## ACETONURIA.

According to Becker and Parlato,<sup>6</sup> acetonuria is a frequent symptom, in healthy men, after narcosis. It lasts from a few hours to several days; this was very marked in a case of bromether intoxication.

The above statements are confirmed by Abram's experiments.<sup>7</sup> Acetonuria follows anesthesia in two-thirds of the cases, the anesthetic used making no difference; if acetonuria is present before, anesthesia increases it. The practical outcome is that, except in cases of urgency, anesthetics should not be administered to diabetic patients.

## UREA IN ANIMAL ORGANS.

Schöndorff's investigations<sup>8</sup> show that urea occurs in the organs of the dog, with the exception of the muscles, heart, and kidneys, in quantity corresponding with that in the blood.

The muscles contain urea. This is a contradiction of the work of previous physiologists; it is present in too large an amount to be accounted for by the blood in the muscles.

Urea is a constituent of the red corpuscles, and is about equally divided between blood corpuscles and serum.

<sup>2</sup> Journal of the Chemical Society, London, January, 1896, II, 51, from Pflüger's Archiv., 1895, 61, 623.

<sup>3</sup> Ibid., December, 1895, I, 690, from Proc. Roy. Soc. 1894, 55, 394.

<sup>4</sup> Ibid., April, 1896, II, 264, from Jour. Pathol. and Bacteriol., 1896, 3, 434.

<sup>5</sup> Ibid., February, 1896, II, 120, from Skand. Archiv. Physiol., 1896, 332.

<sup>6</sup> Ibid., October, 1895, II, 407, from Virchow's Archiv., 1895, 140, 1.

<sup>7</sup> Ibid., April, 1896, II, 264, from Jour. Pathol. and Bacteriology, 1896, 3, 430.

<sup>8</sup> Ibid., May, 1896, II, 318, from Pflüger's Archiv., 1895, 62, 332.

## PARAMUCIN.

According to Mitjukoff,<sup>9</sup> the colloid material formed in ovarian cysts may be of two kinds: (1) Colloid which after boiling with acids reduces Fehling's solution, and is generally combined with proteid matter, as metalbumin or paralbumin; the chief constituent of both these substances was termed pseudomucin by Hammarsten. (2) Colloid which reduces Fehling's solution without treatment with acid; this is termed paramucin in the present research. It is a jelly-like material, which unites with hydrochloric acid, and was thus separated from the contents of the cysts. By boiling with this acid, it is destroyed, forming a humus-like material. By decomposition with alkalis, it yields an albuminate, an albumose, and a carbohydrate. The carbohydrate does not form an osazone, neither does it ferment with yeast.

## PROTEIDS OF MUSCLE PLASMA.

Otto von Fürth's investigations<sup>10</sup> confirm the work of Halliburton in its main point, namely that there are two proteids in the muscle plasma, paramyosinogen and myosinogen which enter into the formation of the muscle clot; the action of a specific ferment to bring about this change was not specially investigated. The principal new fact made out is that paramyosinogen passes into this condition of myosin-fibrin directly; while in the passage of myosinogen into the state of myogen-fibrin, there is an intermediate soluble stage coagulated by heat at the remarkably low temperature of 40°.

Paramyosinogen is a typical globulin, and is regarded as identical with Kühne's myosin. Myosinogen is described as differing from a globulin in many particulars; it is spoken of as a proteid *sui generis*.

The proteid in the muscle serum, described as myoglobulin by Halliburton, is not regarded as a definite substance, but only as a part of the myosinogen which has escaped coagulation. The phenomenon described by Halliburton as recoagulation of myosin, is regarded only as a reprecipitation of globulin.

Peptones, albumoses, and nucleo-proteids were not found.

## PROTEOSES IN SEROUS EFFUSIONS.

Investigations made by Halliburton and Colls<sup>11</sup> support previous conclusions that serous effusions (like the blood from which they originate) are free from proteoses and peptones. Gillespie's conclusion to the contrary is due to his having employed untrustworthy methods. The methods which give good results are those in which either alcohol or trichloroacetic acid is used as the agent for coagulating the native proteids. The trichloroacetic-acid method possesses the advantage of being rapidly performed, although in the investigation of solid organs like the spleen, kidneys, etc., the use of alcohol is preferable. Boiling after acidification is the least trustworthy method, for the coagulation of the native proteids, since it leads to the formation of proteoses from the native proteids present.

## ACTION OF CARBONIC OXIDE ON MAN.

Experiments made by Haldane<sup>12</sup> on himself, show

<sup>9</sup> Ibid., September, 1895, ii, 361, from Archiv. f. Gynäk., 1895, 49, H. 2.

<sup>10</sup> Ibid., January, 1896, ii, 48, from Arch. exp. Path. Pharm., 1895, 36, 281.

<sup>11</sup> Ibid., November, 1895, ii, 455, from Jour. Path. and Bacteriol. 1895, 3, 286.

<sup>12</sup> Ibid., London, January, 1896, ii, 52, from J. Physiol. 1895, 18, 430.

that the symptoms caused by carbonic oxide depend on the extent to which the hemoglobin has been saturated; the percentage saturation of the hemoglobin of the red corpuscles may be estimated during life by a simple colorimetric method. Carbonic oxide is a cumulative poison. The symptoms do not become sensible during rest until the corpuscles are about one-third saturated; with half saturation, the symptoms (respiratory distress, headache, etc.) become urgent.

When air containing this gas is breathed, about half of that actually inhaled is absorbed, except when absorption is coming to a standstill. The time required for the production of sensible symptoms in an adult depends on the time required for the inhalation of about 660 c.c., or the absorption of about 330 c.c. of the pure gas; this time in different animals varies with the respiratory exchange per unit of body weight, and is about twenty times as long in a man as in a mouse; hence a mouse can be used as an indicator in a coal mine before men penetrate into it.

The maximum amount of carbonic oxide capable of being absorbed by the blood from air containing a given small percentage depends on the relative affinities of oxygen and carbonic oxide for hemoglobin, and the relative tension of the two gases in arterial blood. The affinity of carbonic oxide for hemoglobin is about 140 times that of oxygen, and the oxygen tension of human arterial blood is, approximately, 16 per cent. of an atmosphere. Distinct symptoms, appreciable during rest, are not produced until about 0.05 per cent. of the gas is present; with about 0.2 per cent. urgent symptoms are produced. With a given percentage of carbonic oxide in air, a certain percentage saturation of the blood is reached within about 150 minutes, and is not afterwards exceeded, however long the breathing of the vitiated air is continued. The disappearance of the gas from the blood when fresh air is again breathed is always much slower than the absorption of the gas, and is chiefly due to dissociation of carbonylhemoglobin by the mass influence of the oxygen in the pulmonary capillaries, and consequent diffusion of the gas outwards through the alveolar epithelium.

## POISONOUS EFFECTS OF ACETYLENE.

The poisonous effects of acetylene have been investigated by Gréhan, Berthelot, and Moissan.<sup>13</sup> A mixture of 20 vols. of acetylene, prepared from calcium carbide, 20.8 vols. of oxygen, and 59.2 vols. of nitrogen was breathed by a dog for thirty-five minutes without any marked disturbance, and 100 c. c. of the blood was found to contain 10 c. c. of acetylene. With 40 vols. of acetylene, the proportion of oxygen remaining the same, a dog died in less than an hour, owing to failure of the heart's action, and 100 c. c. of blood contained 20 c. c. of acetylene. With 79 vols. of acetylene and 21 vols. of oxygen, the poisonous effects were still more strongly marked. It follows that acetylene may be fatally poisonous when present in proportions as high as 40 per cent. by volume.

A mixture of coal gas with air and oxygen containing 20.8 per cent. of the latter and one per cent. of carbonic oxide was nearly fatal to a dog after it had been breathed for about ten minutes, and 100 c. c. of the dog's blood contained 27 c. c. of carbonic oxide. Hence acetylene is much less poisonous than ordinary coal gas. The poisonous properties often attributed

<sup>13</sup> Ibid., March, 1896, ii, 200, from Compt. rend., 1895, cxli, 564-566

to acetylene, as prepared by the older methods, are probably due to the presence of carbonic oxide or hydrogen cyanide.

Moissan finds that when acetylene is prepared from pure calcium carbide, and is purified by being liquefied, it has a very pleasant, ethereal odor, and can be breathed in small quantity without bad effects. If, however, the calcium carbide has been prepared from coal and impure lime, it may contain calcium sulphide and phosphide, and the acetylene prepared from it then has a very disagreeable odor.

Experiments made by Brociner<sup>14</sup> show that 100 vols. of blood dissolve about 80 vols. of acetylene; the solution shows no characteristic spectrum, and is reduced by ammonium sulphide as readily as ordinary arterial blood. In a vacuum, part of the acetylene is evolved at the ordinary temperature and part at 60°. If the blood is allowed to putrefy, the volume of acetylene given off at the ordinary temperature remains practically the same, but the quantity liberated at 60° decreases as putrefaction advances. If any compound of acetylene and hemoglobin is formed, it is very unstable, and is not analogous to carboxyhemoglobin. The poisonous action of acetylene is very feeble, and animals can breathe large quantities of the gas for several hours without injurious effect, provided the proportion of oxygen is kept up to the normal amount, and the products of respiration are not allowed to accumulate.

#### COCAINE.

H. W. Glasenap's investigations<sup>15</sup> show that cocaine can be detected either as such or as ecgonine after thirty-three days' exposure to the influence of putrefying flesh or human blood. In cases of poisoning, however, if death has ensued within two hours, it will be found unaltered, but if more than four hours have elapsed before death, it will be found (in the urine) as ecgonine.

### Reports of Societies.

#### AMERICAN MEDICAL ASSOCIATION.

FORTY-SEVENTH ANNUAL MEETING, ATLANTA, GA.  
MAY 5, 6, 7 and 8, 1896.

#### SECTION ON THE PRACTICE OF MEDICINE.

DR. WILLIAM E. QUINE, of Chicago, Chairman,  
selected for his address

#### THE REMEDIAL APPLICATIONS OF BONE MARROW.

He said that for the original mention of bone marrow as a possible remedy we were entitled to Brown-Séquard and D'Arsonval, who, in 1891, suggested its use in the treatment of leukemia and other diseases believed to be characterized by defective hemogenesis. A year and a half later Filleau reported its successful employment in the form of an abstract in the treatment of the anemia of debility and of tuberculosis; and Macalister recorded a favorable result of its use in one case of lymphadenoma.

It was left for T. R. Fraser, of Edinburgh, however, to press the new remedy forcibly upon the attention of the medical world, and this he did in a report

upon its curative effect in a case of progressive pernicious anemia.<sup>1</sup> The clinical phenomena described were those of extreme anemia, and the diagnosis was based upon repeated blood examinations. The treatment included the use of arsenic, iron and salol part of the time, but no improvement was noted until marrow was given, and the improvement advanced steadily under the use of the marrow after the other agents were withdrawn. The animal product — whether of the yellow or the red variety is not stated — was given to the extent of three ounces daily. The report ends with the declaration that "The patient is now in a practically normal condition."

He said that his own observations in relation to the effects of marrow in cases of chlorosis and simple anemia agreed in every detail with those already recorded. In one case of splenic leukemia<sup>2</sup> the remedy used alone had the effect of increasing the number of red corpuscles and lessening the hemorrhagic tendency without its appearing to improve the condition of the patient in other respects, or retarding the progress of his sickness to a fatal termination. In this case, also, malarial organisms, so pronounced by two thoroughly trained microscopists, were found in the patient's blood in the last weeks of his life. They had been previously diligently searched for on several occasions without success.

Bone marrow then, and especially red marrow, is certainly a readily assimilated organic compound of iron, and is a valuable addition to the resources of the physician in cases of ordinary chlorosis and anemia, and in some cases of blood impoverishment of a more intractable kind.

Whether it is anything more than an assimilable preparation of iron is not conclusively proved. The claims made for it in relation to the cure of pernicious anemia, leukemia and kindred disorders, seem to be premature; for sufficient time had not elapsed in any case to warrant such a conclusion. Moreover, in some of these cases, as pointed out by Billings, the correctness of the diagnosis is not above suspicion; and in others arsenic and iron were given in conjunction, or in alternation with the marrow. We have no knowledge that enables us to understand how it is possible for this substance to effect a cure of pernicious anemia or of leukemia. It cannot act like an ordinary animal extract which supplies a deficiency. Its operation must be unlike that of thyroid extract in myxedema and adrenal extract in Addison's disease. In these disorders there is atrophy or some degree of distraction of the thyroid and adrenals respectively, and consequently insufficient secretion from them to supply the needs of the body; the administration of an artificial extract of the thyroid or adrenal supplies the demand directly. In pernicious anemia and leukemia the bone marrow seems to be hypertrophic and corrective, but notwithstanding its over-activity it is unable to keep pace with the globular distraction that is going on at the same time. Finally, there is no proof that marrow is a secretion. Its function seems to be that of cell production and development. Now, is there any proof that this function is influenced in any way by any constituent or secretion of the marrow itself (Billings)? Many accurate observations are needed to make a basis for conclusions that will endure.

<sup>14</sup> Ibid., April, 1896, II, 264, from *Compt. rend.*, 1896, cxxi, 773.

<sup>15</sup> Ibid., August, 1896, II, 386.

<sup>1</sup> *British Medical Journal*, April 7, 1894.

<sup>2</sup> *Chicago Clinical Review*, January, 1896.

DR. ELMER LEE, of Chicago, read a paper entitled  
HOW TO CURE RHEUMATISM.

He said that rheumatism is acute when it is recent, and chronic when the disease has extended over a longer period; articular when the manifestation is chiefly in the joints; inflammatory when the whole body exhibits the symptoms of inflammation and pain; muscular when relating to the striated and non-striated tissues. Sciatica and lumbago belong to the same family; even gout is itself closely related in its origin, differing only in its symptomatology.

He said the present paper was concerned with a practical review of the author's system of managing this disease in its various forms.

Disturbance of nutrition, with consequent impairment of the solids and fluids of the body, always precedes rheumatism. Invasion of the soft tissues cannot take place unless the functional activity of both structures is impaired. It is impossible to name the first symptom in the series of alterations of the elementary forms. But in almost all cases which have come under observation, certain functions are almost uniformly abnormal. Variation in the volume as well as the nature of the fluid elements of the body, and changes in the quality and proportion of the solids are constant factors in the pathology of rheumatism. The influencing or producing causes of these changes in the body are, indeed, hard to exactly discover. But fortunately they are not indispensable to successful treatment of the condition which is found that requires remedial aid. Whenever there are functional changes they consist for the most part of abnormal muscular action in some portion of the body, principally with reference to the capillaries and small arteries.

The same condition may be an exciting cause of other diseases, the peculiar symptoms determining the character of the affection being dependent upon the state of the general system of the individual. Thus a given influence may produce in different individuals quite contrary symptoms. With disturbed nutrition, alteration of the fluids and solids of the body is accompanied by obstructions in the circulatory and excretory systems. Lowered vitality is the necessary result, which is the basis upon which rheumatism is determined. If functional activity remains normal, the vital resistance of the soft structures prevents retention of the impurities. There is no portion of the economy which suffers alteration so readily as the circulating fluids. Upon the relative maintenance of the normal proportion of the fluids and solids, the health of the body depends. It has been found by examinations of the blood that there is a loss of balance between the fluid and solid ingredients. It has also been determined by scientific investigation, that the origin of diseases lies largely in the imperfect circulation of the fluid elements of the body through the capillaries, altering in turn the functional activity of the lymphatic vessels.

The exact pathology of rheumatism is undetermined. The analyses of the blood indicate no chemical or organic changes. The cellular structures are identical with those of usual conditions found in health. Lactic acid and uric acid and other chemical substances are not found to prevail to a greater degree than at other times. The only change that is discoverable is the diminution of red corpuscles.

The various theories concerning the cause and origin of rheumatism in the light of the exact knowledge determined by physical and chemical analysis of the blood, are not satisfactory. The exact knowledge on the subject consists in the single positive statement that there is alteration in the number of red cells of the blood. In addition to this it is also able to be definitely stated that there is diminution in volume of the fluid element of the blood. These facts would seem to throw the responsibility upon the capillary circulation rather than upon the change in the blood chemistry. It is upon recognition of the foregoing physical alterations of the blood that his practice in the treatment of rheumatism is founded.

He said the treatment of rheumatism by hydiatic processes was based now upon an experience in practice during a period of six years. The plan which is pursued is satisfactory to the highest interest of the patient and the physician. It is something that is definite; it is reliable, and the gains that are secured in the progress of the treatment are real and can be determined with an accuracy approaching true science. The only difficulty that is experienced in pursuing the hydiatic plan lies in the fact that it is considered by the patient and the friends as novel and therefore to be guarded against. Besides the lack of support from the profession, owing to misunderstanding by reason of clinical inexperience, lack of actual knowledge, and doubt, obstacles are sometimes interposed which operate to the disadvantage of both the physician and his patient.

The treatment is begun by prescribing regular, definite doses of pure soft water at frequent intervals; each dose of water contains some harmless remedy to satisfy the notions of the patient and his friends. The amount of water which is prescribed at each dose is scientifically determined by the whole weight of the body, the age of the patient, and the degree of the fever.

The next process in the use of hydiatics is irrigation of the bowels if circumstances favor it. Many cases have been treated by him in which it was inconvenient or undesirable to use water to wash the bowels. It is therefore established, clinically, that while irrigation is in all cases an aid to treatment, still it is not indispensable.

The third hydiatic process is the use of water upon the surface of the body. If the patient is agreeable to direction and conveniently located, the full bath is recommended. The temperature of the water should be a few degrees below the temperature of the body. When the toilet room is inaccessible or it is inconvenient to remove the patient, three bathing processes are followed in his practice: (1) sponging the body with water from a basin, (2) the wet pack, and (3) the use of his sprinkle bath. The sprinkle bath consists of cool water applied to the surface of the body at intervals of two or three hours, during the day and evening, by means of a sprinkle nozzle attached to the end of the tubing of the fountain syringe, which is suspended from a chandelier, bedpost or a nail in the wall. Swelled and painful joints are packed in a compress of cold water until relief comes. Briefly speaking, this is his process. The precise detail work must necessarily vary in every case. The food is immaterial; whatever is the most simple and the easiest to provide, and which is agreeable to the patient is all that is required. Purposely the recital

of cases has been omitted. Such recitals are tedious, and for this reason are omitted from this paper.

#### SOME ODD BITS ON CONSTIPATION: SOME OF ITS EFFECTS AND ITS NON-MEDICINAL TREATMENT.

This paper was read by DR. E. S. PETTILJOHN, of Alma, Mich. He said the large number of people suffering from constipation and its effects, and the clinical difficulty met in obtaining relief therefrom, leads to the conclusion that the full signification of this affliction and its deleterious influence are not comprehended either by the people or the profession.

Constipation as a functional disorder may be defined as an abnormal condition of the great colon and the entire intestinal tract manifested by the unusual retention of excrementitious material, both as to quantity and time of evacuation. It may be owing to either diminished action of the muscular coat, to the diminished secretion from the mucous membrane or both, to defective innervation, to habits and occupation, climate or diet, in addition to which there seems to be an infinite variety of causes.

A study of the history of 300 cases shows that about 60 per cent. of patients are suffering from this ailment, and that the number is proportionately larger among women than among men.

Congenital constipation may occur independently upon the anatomy of the colon, the water being absorbed by a reduplication of the colon itself, especially in the descending part, as that is longer in infants in proportion as compared with the ascending and transverse, and hence liable by being crowded down into the pelvis to flexures and reduplications that favor impaction.

Coming to the treatment, the author said that hydrotherapeutics had proved successful remedies in his practice. Drinking large quantities of cold water on arising, and an hour before meals, and two or three hours after food, taking in the day 70 to 80 ounces, beside that with the meals, is of exceeding great value. This remedy, with regulation of habit, has cured many cases.

Fomentations to the bowels, stomach and liver daily and a cold pack at bedtime, have been successful. Alternation of hot and cold to the spine, and the cool bath, have shown results.

The difficulty he finds in the use of any of these measures or a combination of them, is to induce the patient to be systematic and persistent in following directions. But he is thoroughly convinced that by these means producing constitutional and local effects, more satisfactory results are obtained than with medicines; and when the patient recovers he stays well.

That constipation has a physical and a moral effect the laity recognizes, and will agree with the author who says, "Those persons whose bowels are freed by an easy, regular movement every morning, so soon as they have breakfasted, are meek, affable, gracious, kind; and no from their mouth comes with more grace than yes from the mouth of one who is constipated."

DR. E. FLOOD, Baldwinville, Mass., read a paper entitled

#### INTESTINAL ANTISEPSIS, DIET AND CASTRATION IN RELATION TO EPILEPSY.

The author first dwelt upon diet. The principle laid down is that most foods are suitable when taken

at the proper times, in right amounts with suitable mastication.

As to intestinal antiseptics, trial has been made with a number of drugs, and other observations are under way. The suggestion is offered that the good effect of some drugs, such, for example, as potassium bromide, borax, salol, etc., may be more due to their influence in this direction than to any other property. Drug treatment is not much relied on. The main recommendations are lavage of stomach and bowels with water and ozone preparations, a thorough system of bathing, exercise to aid digestion, and removal of parasites.

Twenty-two cases of castration are cited. A new method of operating is suggested, and has been used in most of these cases—that of making but one small cut in the scrotum. Results have shown the operation advisable.

DR. W. T. ENGLISH, of Pennsylvania, read a paper entitled

#### LYCOPERSICUM CARDIOPATHIA.

DR. J. W. GROSVENOR, of New York, read a paper entitled

#### THE EFFECT OF ALCOHOL ON THE ORGANS OF SPECIAL SENSE.

Special attention was directed in this paper to the senses of seeing, feeling, hearing and weight. After carefully studying this subject, some of the thoughts which have been forced upon the author's attention are as follows:

(1) Guided by the chief characteristic of alcohol, its paralyzing influence, is it not more appropriate to call it a depressant than a stimulant?

(2) If alcohol becomes popularly known as a depressant, will it not be less frequently used by the laity in those physical conditions which are commonly supposed to demand stimulation?

(3) Knowing that alcohol is a depressant even when given in small doses, ought not the medical profession to exercise great care in administering it in debilitated states of the system?

(4) The use of alcoholics hypodermically in cases of heart failure or arrest of respiration, caused by ether or chloroform narcosis, is bad practice.

(5) It is the duty of the medical profession of this country, clearly and fully comprehending not only the damage to the organs of special sense, but also the ravages upon all the important organs of the body caused by alcohol, to discourage by every laudable effort the habit of drinking alcohol intoxicants, to the end that our national life may be characterized by physical and moral integrity, clear brains, steady hands and brave hearts.

DR. W. C. WEBER, of Cleveland, Ohio, followed with a paper entitled

#### EARLY DIAGNOSIS OF CARCINOMA OF THE STOMACH BY MEANS OF CHEMICAL ANALYSIS OF THE GASTRIC CONTENTS.

The question of how to arrive at an early diagnosis of cancer of the stomach is certainly one which has attracted considerable interest in recent years, and hence concentrated efforts in the study of this peculiarly interesting disease. The reason of this becomes apparent in view of the fact that not infrequently cases come under one's observation which present few

and indefinite objective symptoms and a vague sense of disturbance in the digestive process as the only subjective symptoms of ailments which in their later stages prove unmistakably to be cancerous.

To proceed in the ordinary way — to palpate, percuss and gather the history of the case — is insufficient and often ends in negative and disappointing results. Such failures can, to a great extent, be obviated by supplementing the usual method of diagnosis with a process of chemical analysis to which the stomach contents are subjected.

Preparatory to the investigation of the gastric juice all medication is to be excluded for a day or two previous to the administration of the test breakfast, which consists of a light biscuit or small piece of toast and a weak cup of tea or glass of water (it is well to note here that after the test breakfast the HCl may be absent, but may appear when a meal of steak, potatoes, etc., is used); this should be given from one to two hours before the removal of the stomach contents, which should be forced or expressed through the stomach-tube without the addition of water, and the stomach may then be lavaged in the usual manner before the tube is withdrawn.

Examination of the blood will often lend very material aid in differentiating carcinoma of the stomach from the pernicious anemia caused by atrophy of the glandular apparatus of the stomach. In cases of cancer of the stomach that have reached a stage where it may be confounded with the pernicious anemia dependent upon glandular atrophy, there is always a polynuclear leucocytosis of varying degree, poikilocytoses, a considerable loss of hemoglobin, a diminution of the number of red cells, which, however, is not as marked as in cases of pernicious anemia of glandular atrophy.

The author reported two cases. In Case I, the diagnosis was made on evidence furnished by the chemical analysis of the chyme, in conjunction with the only constitutional symptom present — general weakness, which refused to be modified in the least degree by medication. The method crudely outlined necessitates increased labor and the acquaintance of certain technique, which will yield results, he believes, that will amply justify the efforts expended in so fascinating a field as this one.

DR. A. F. PATTEE, of Boston, contributed a paper entitled

#### SPASMODIC TORTICOLLIS, WITH SPECIAL REFERENCE TO TREATMENT.

He said that he had in his own practice seen ten cases that have had various operations performed on the nerves and muscles, and the result has been the reverse of successful — in fact, disastrous. He has collected statistics from many sources, amounting to between four hundred and five hundred cases, in which surgical operations in one way and another have been performed in torticollis, without deriving the slightest benefit therefrom; in fact, the conditions were worse than before the operation.

DR. J. N. HALL, of Denver, Col., then read a paper, entitled

#### THE VALUE OF THE PULMONIC SECOND SOUND.

The author said that a knowledge of the value of this sign may at times save one from serious error, as in the following case, seen in consultation some years since:

A girl, six years of age, had presented for five days all the rational signs of acute lobar pneumonia, but the attending physician had been unable, after repeated examinations, to locate the disease. Finally, fearing that some other trouble was setting in, he asked the author to see the case with him. After hearing the history he confidently expected to find the signs of pneumonia in the left chest, and was surprised to find the fronts entirely normal, so far as he could determine. Because of the child's weakness it was proposed to him that the examination of the back be omitted, but having noted a decided accentuation of the pulmonic second sound, and called the attending physician's attention to it, he insisted upon the complete examination, confident that anything of sufficient gravity to cause a decided increase in the tension in the pulmonic artery, must be discoverable upon careful examination. The backs were found normal, however, with the exception of an area two inches in diameter near the lower angle of the left scapula. Here very moderate dulness existed, but the auscultatory signs were marked, namely, bronchial respiration, bronchophony and moist râles. It was evidently an acute pneumonia which approached the surface of the lung only at this point, and to one not fairly expert in physical diagnosis, not easy to discover. He admits, of course, that no physician should overlook such signs, but they were overlooked by the attendant in this case, and by a previous consultant. If the two had appreciated the meaning of the decided accentuation of the sound in question, they would probably have been led to make a successful search for the cause of it.

He believed that most of the present generation of physicians in active practice were taught that the murmurs at the pulmonic orifice were not only rare but of comparatively little importance. The effect of this teaching has been to lead many of us to entirely neglect all sounds at this orifice in ordinary examinations, for he has often seen its area passed by without so much as the touch of the stethoscope. Inasmuch as a proper idea of the amount of obstruction in the pulmonic circuit in pneumonia, and hence of the amount of work called for from the right ventricle — a most important factor in prognosis and in deciding upon the advisability of administering cardiac stimulants — cannot be obtained without an examination of the sound in question; nor a correct judgment be formed, in a case of chronic bronchitis, as to whether there is beginning obstruction and consequent hypertrophy of the right heart from emphysema which has not yet developed sufficiently to be patent to percussion; it would seem to be proven, when the evidence we have heretofore adduced is considered, that this sound should be investigated in every-day practice exactly as other accessible chest sounds are, the ease with which such examination can be made being a powerful recommendation of the procedure.

Several of the papers on the programme were read by title.

**A DUMB THERMOMETER.** — A member of the Zurich Medical Society recently exhibited a self-registering clinical thermometer on which there were no degree marks. The instrument could be left with the patient's family to take the temperature in the absence of the physician, and the latter could then read it by means of an attachable scale of glass or metal. — *Medical Record.*

## Recent Literature.

*The Urine in Health and Disease, and Urinary Analysis, Physiologically and Pathologically Considered.* By D. CAMPBELL BLACK, M.D., L.R.C.S. Edin., F.C.P. & S., Glas., Professor of Physiology in Anderson's College Medical School, etc. Philadelphia: Lea Brothers & Co. 1895.

In this book the author has endeavored to treat the subject of the urine in health and disease from a practical and clinical standpoint. He devotes a chapter to the anatomy and physiology of the kidney; he then takes up the various important constituents of the urine, both normal and abnormal.

The plan of the book is a good one. Its usefulness is, however, very much impaired by numerous incorrect and vague statements. For instance, one would infer from the table on page 120 that the leucomaines and ptomaines are proteids, and that these bodies, together with mucin, are varieties of either (or both) fibrin or coagulated proteid.

On page 148, we find the following incorrect statement: "Of all albuminous substances, sulphate of magnesia precipitates globulin alone."

On page 128, the author directs the addition of chloride of sodium or sulphate of magnesia for the separation of globulin, as a preliminary to the test of albumin, but gives no directions as to the quantity to be used — an important matter.

On page 152: "The biuret reaction affords the best evidence of the presence of peptones in the urine." The albumoses, however, give the same reaction, and the process given by the author does not distinguish between the two.

On page 154, the properties of hemi-albumose are thus described: "hemi-albumose gives most of the albumin reactions, but it dissolves with difficulty in cold solutions, though rapidly on boiling, by which it is contradistinguished from albumin." The author's meaning here is not quite clear. Possibly he refers to the fact that albumose precipitates tend to dissolve upon the application of heat, and to reappear as the solution cools.

In describing Teichmann's hemin test, on page 204, the author writes: "For this reaction the coagulum which is deposited from the urine is to be gently treated, etc."

What this "coagulum" is, or how it is to be obtained, is not evident.

The nucleo-albumin of the bile is erroneously styled mucin; so also the nucleo-albumin of the urine.

Some peculiarities in spelling are to be noted; for example, albumen for albumin. Fibrin, mucin, and globulin are spelled, at times with, at times without (but usually with) a final e.

We might continue, but the examples given are sufficient, we believe, to justify our criticism. Some parts of the book are good; others, notably Part III., need careful revision. We cannot recommend the book as a whole.

*Sterility.* By ROBERT BELL, M.D., F.F.P.S.G., Senior Physician to the Glasgow Hospital for Diseases peculiar to Women. London: J. & A. Churchill. 1896.

The prevailing impression left on the mind by this little book is that the author has armed himself with

a sledge hammer for the purpose of demolishing cobwebs. Some somewhat strange positions which he takes are supported rather by assertions than by argument; the remainder of his conclusions has long been thoroughly accepted, at any rate in this community. The preface is devoted to a rather startlingly dramatic picture of the active passion with which the author assumes that the spermatozoa approach the ovum, and of the satisfaction with which the one fortunate individual observes the death of the other unfortunates. The first chapter may be summarized as a statement that sterility is mainly dependent upon endometritis, or diseases of the adnexæ. The next two tell us that dysmenorrhea and diseases of the adnexæ are dependent upon endometritis. The next two are given up to the discussion of the comparative inefficacy of intra-uterine medication and the value of curettage, together with a description of a somewhat peculiar instrument which the author uses. A chapter on ichthyol winds up the book, which is at all events entertaining throughout.

*A Manual of Anatomy.* By IRVING S. HAYNES, Ph.B., M.D., Adjunct Professor and Demonstrator of Anatomy in the Medical Department of New York University. With 184 half-tone Illustrations and 42 Diagrams. Philadelphia: W. B. Saunders. 1896.

The chief reason of the scarceness of really good works for use in the dissecting-room is undoubtedly the great difficulty of well defining the scope of the work, in keeping it subordinate to a treatise proper, and also in giving it a distinctly higher position than a compendium. Some description of organs beyond the enumeration of their chief features is necessary, and it is essential that the treatment should be brief. To do all this well is no easy task. While there is much that is good in the book before us, the ideal guide for the dissecting-room, which we presume was the object, has not been produced. The directions for making the successive steps of the dissection show the author's thorough knowledge of this part of his subject. We wish to praise particularly his attempts to explain the complicated structure of the brain and of the peritoneum by the history of development, which is the only scientific and satisfactory way. The treatment of the peritoneum leaves something, however, to be desired, but to make it clear to the beginner is well-nigh impossible. In his description of parts the author is perhaps a little too brief. Thus, in the case of the very difficult thyro-arytenoid muscle, some description of the upper part is essential for its comprehension, but he contents himself with mentioning its existence. We should have liked a more precise statement of the share of the tendon of the flexor hallucis longus in supplying the smaller toes.

One of the features of the book is the illustration by means of photographic methods. It confirms what we have often preached, that for the present at least this method is inadequate. There are some plates that do not deserve this criticism. Some of those of the surface of the brain are truly admirable; but most of them are of very little value. An expert might well be puzzled to explain some of them, and for a student most are unsatisfactory. This is the more to be regretted that the dissections which they represent are evidently very fine ones.

The paper and printing are exceptionally good, making the book an uncommonly handsome one.



*An Elementary Course in Experimental and Analytical Chemistry.* By JOHN H. LONG, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Schools of Medicine and Pharmacy of Northwestern University. Chicago: E. H. Colegrove & Co. 1895.

The three general topics included in the elementary course of laboratory instruction in chemistry recommended by the author are the following: general experiments to illustrate the preparation and properties of the important elements and their compounds, inorganic qualitative analysis, and volumetric analysis. The author rightly believes that a knowledge of the properties of substances is more important for the beginner, than an acquaintance with methods of separation. Accordingly, in the first part of his manual, he offers a well-selected list of illustrative experiments in general chemistry, for the fundamental work in the laboratory. In a course of this kind the student draws his inferences largely from the results of his own laboratory work, and consequently obtains a much better knowledge of the important facts of general chemistry than he could obtain from a lecture-room course, or from the study of books alone.

The processes given in the sections devoted to qualitative and volumetric analysis do not differ essentially from those found in other text-books. The principles upon which the separation and detection of the elements are based are, however, explained with rather more detail than is usual in text-books; and especial attention has been given to explanations of the reactions on which the volumetric processes are based.

The book, as a whole, is an excellent one. The course outlined, taken in connection with lectures and demonstrations on the same subjects, seems to us to be especially well adapted to meet the requirements of our medical schools, most of which are still obliged to provide a certain amount of elementary instruction in chemistry as a preliminary to the study of physiological chemistry.

*Twentieth Century Practice.* An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume V, "Diseases of the Skin." New York: William Wood & Co. 1896.

The fifth volume of this encyclopedia has succeeded the sixth. Its list of well-known contributors is of an international character. Drs. Brocq, of Paris, Crocker, of London, Kaposi, of Vienna, Leloir, of Lille, France, are the transatlantic writers. Drs. Bowen, of Boston, Bulkley, of New York, Hyde, of Chicago, Montgomery, of San Francisco, Van Harlingen, of Philadelphia, Allen and Whitehouse, of New York, are the contributors representing the United States. The skin and its diseases is the one subject treated in this volume of a little over 900 pages. The subject is well covered. One of the best of these monographs is that by Dr. J. T. Bowen, of Boston.

THE Italian government recently sent an artificial limb maker to Africa to supply hands and feet to about two hundred and fifty native soldiers who had been captured by the Abyssinians and, after having each a foot and a hand cut off, were set free again.

## THE BOSTON Medical and Surgical Journal.

THURSDAY, JULY 30, 1896.

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### BACTERIA IN DISEASES OF THE SKIN.

How far bacteria are concerned in the etiology of skin diseases, is a question which is at present occupying dermatologists, and is discussed by Dr. Frank Payne in a paper read at the Annual Meeting of the Dermatological Society of Great Britain on May 20th.<sup>1</sup>

The connection of micrococci with suppuration in the skin, as elsewhere, has been sufficiently proved. The suppurative affections of the skin are principally impetigo, ecthyma (if this be really distinct), pustular acne, folliculitis, sycosis, boils, carbuncles, etc., pustular or impetiginous eczema, pustular scabies, pustular phthiriasis. In all these diseases, such micro-organisms as the staphylococcus pyogenes aureus and albus, and the rarer species of staphylococcus citreus, are found in abundance; and that they are the true cause of the suppuration is hardly open to doubt. Other factors, such as the composition of the blood, its containing sugar or products of imperfect digestion, general cachexia, weakening of the power of resistance in the tissues, special susceptibility, etc., are but predisposing causes. These suppurative dermatoses are frequently associated with suppuration of other organs (conjunctivitis, otorrhea, purulent rhinitis, ulcerative stomatitis, even purulent vaginitis, and suppurating wounds and scratches). The cutaneous suppuration may be derived from the other affections, or it may give rise to them.

To this whole class of primary or secondary suppurations of the skin, Dr. Payne proposes the name *staphylococcia purulenta cutanea* (a term borrowed from Darier and Louis Wickham).

Streptococci are rare in cutaneous suppurations, having been observed only in a few cases of impetigo (not to speak of the streptococcus of erysipelas). The general property of the streptococci is to cause diffuse, spreading inflammations, while the staphylococcal suppurations of the skin are generally remarkably localized. It is known that these organisms are present in

<sup>1</sup> Lancet, July 4, 1896.

or on the skin of many healthy people, living a purely saprophytic life, without producing any pathogenic effect. They may be seen or raised by cultivation from such places as the dirt under the nails, the moist parts between the toes, dandruff or scurf on the scalp, and numerous other parts. Doubtless in most cases the cocci which produce suppuration are present on or in the skin beforehand, although they may come from the clothes or other external objects. Every person who has pyogenic organisms on his skin or external orifices is a possible source of danger to others, though he himself may be quite free from inflammation. It is doubtless very rare that the microbes which produce cutaneous suppuration come from the blood, being excreted by the sebaceous and sudoriparous glands.

Important nurseries for bacteria are the hairy scalp, the moist parts of the feet, the anal and perineal regions with the adjoining parts. In all these parts, saprophytic bacteria are found which may become pathogenic. The suppuration of comedones or common acne on the face is undoubtedly often due to the descent of pyogenic cocci from the scalp. The occurrence of boils on the nape of the neck may be attributed to these cocci being worked by the friction of the clothes into the cutaneous glands. The spread of seborrheic eczema from the scalp is an unquestioned fact.

Impetigo contagiosa is a superficial suppuration caused by the implantation or inoculation of pus. It is more likely to rise from impetigo itself than from other suppurations, and more when the disease occurs in an epidemic form than from isolated cases. It is distinctly contagious, while acne, boils, whitlow and other forms of suppuration are only locally or partially contagious. This fact of greater contagiousity remains to be explained. A remarkable instance of a transformation of local into infectious suppuration is "foot-ball impetigo" which has been seen so often in public schools. Boys engaged in a tight "scrum" often get abrasions about the face and ears, and these becoming infected, suppuration is set up, which may be transferred to other boys, and thus an actual epidemic is produced. Specimens from an epidemic of this sort were examined microscopically by Dr. Galloway, and he found chiefly the staphylococcus aureus and albus, which many of the football players might have been carrying about on their skin long before they were attacked with impetigo. The inference would seem to be that the same cocci show a great variability in virulence or infectiveness. We have first, the condition of a simple saprophyte producing no pathogenic effect; next, a condition of local inflammation, such as pustules, boils, and festering wounds; next, local inoculability on the same person, and finally the condition of extreme virulence with development of contagiousity. Out of a simple saprophytic growth, at length a definite disease results, quite comparable to a specific infection.

With regard to the causation of eczema, there is still wide divergence among dermatologists, one party

affirming eczema to be of parasitic origin, another denying that it is in any sense parasitic. Many eczemas, as Van Harlingen says, are due to thermal or chemical irritation, or to stagnation of the blood; bacteria may readily lodge on eczematous surfaces and thus give rise to the idea that they were the original cause. While some kinds of eczema are undoubtedly due to bacteria and should be classed under the head of "dermatitis parasitaria," Payne gives his adhesion to the theory that eczema in general is due to the saprophytic organisms "which take advantage of some disturbance of nutrition to cause inflammation, and thus develop infective properties."

It is needless to affirm that definite proof of this proposition is lacking, but those who are curious to see the best that can be said in its favor should carefully read Payne's article, in which views formerly expressed by Eichorst are presented. In eczema, as in impetigo, we often see local infection proceeding from certain centres where bacteria abound, the scalp, the feet, and the perineal region, and adjacent parts. From these three centres eczema may spread and become general. Certainly the seborrheic eczema, first described by Unna, is now an accepted form. Starting from a seborrheic condition of the scalp, the eczema may invade the neck or face, and then spread to other parts of the surface. Rarely chronic eczema of the anus, scrotum, or perineal region gives rise to an extension over a large part of the skin. Payne thinks that there are three types clearly recognizable: "descending," "ascending," and "centrifugal" eczema.

It cannot, however, be said that the specific bacteria of eczema have yet been found; there are doubtless bacteria enough in all the lesions, but the problem is to pick out those that are truly pathogenic. There are first the cocci of suppuration, and there is a peculiar diplococcus seen in sections deep down in the skin. Forms resembling the gonococcus and sarcoma may also be found. The problem, as Payne expresses it, is this: "Are these organisms saprophytic inhabitants of the skin, or are they introduced from without? Are they capable of producing eczema in the same definite sense as the parasites of erysipelas, anthrax or tinea produce those diseases? Is some preliminary disturbance of nutrition necessary for them to exert a pathogenic effect? Can cases of eczema be found where the lesions are quite free from bacteria? And may these, therefore, be only accidental concomitants of the eczema? Lastly, do the results of treatment support or discredit the bacterial theory?"

#### THE ANNUAL REPORT OF THE BOSTON CITY HOSPITAL.

THE Thirty-second Annual Report of the trustees of the Boston City Hospital, together with the Report of the Superintendent, gives an account of the great improvements recently made and now in progress at this institution.

This hospital year has been marked by the opening

of the South Department, for contagious diseases. Besides providing the city with an institution unrivalled in the world in its facilities for the treatment and isolation of diphtheria and scarlet fever, its establishment freed the hospital from the constant and real danger of the spread of these diseases among patients, nurses and employees of the general wards.

The report contains a brief description of the South Department with photographs of one of the wards and a private room. During the five months from the opening of this department, August 31, 1895, to January 31, 1896, 1,139 cases were treated, with 120 deaths. Of these deaths, 53 occurred within forty-eight hours after admission. The mortality from diphtheria was 11 per cent., and the average mortality from all causes was 10½ per cent. The average age of the patients treated in this department was nine years, and it is perhaps partly due to this fact that the cost per capita in this department is, as nearly as can be estimated, only 70 per cent. of the average for the hospital proper. The trustees conclude, and rightly, that this report of the first five months of the South Department amply demonstrates the wisdom of the establishment of such a separate department for contagious diseases.

Another new and most important addition during the year to the facilities of the hospital has been the pathological laboratory, mortuary, and mortuary chapel. The pathological laboratory is a large building, 118 feet long by 42 feet wide, with a large post-mortem room, in the form of an amphitheatre, constructed entirely of metal or marble, with a seating capacity for seventy-two persons. The clinical, biological and pathological laboratory, rooms for special research, etc., which are briefly described, culture-rooms, photographic-rooms, etc., provide the best of facilities for special research and for teaching. The building is ventilated by a ventilating fan, and the air kept pure by straining through cloth. These excellent laboratory facilities, as the trustees remark, provide the professional staff of the hospital with every facility for the treatment of patients on the lines of most advanced scientific medicine, and the wisdom of the large expenditure which has been necessary for their establishment cannot admit of question.

The two new surgical wards at the date of the report were well advanced toward completion, and when opened, will furnish fifty-nine additional surgical beds; and by the close of the year it is estimated that the number of beds in all the departments will be 812.

Substantial progress has been made during the year on the new operating building.

The total cost of maintaining the hospital during the present fiscal year was estimated by the trustees at \$363,225, but the funds found available for the hospital department were only \$340,000, so that a restriction of expenditures was necessary.

The total number of patients admitted to the hospital proper during the year was 7,956; 3,206 of whom were admitted to the medical, and 3,222 to the surgical

vices; 850 patients were admitted to the contagious; 503 to the gynecological; 100 to the ophthalmic, and 75 to the aural services.

In the out-patient department, 17,740 cases were treated, 7,341 of whom were surgical, 3,377 medical, and the remainder were treated at the various departments for special diseases.

The actual cost of maintaining the hospital proper for the fiscal year was \$228,302.36, an average weekly cost of \$9.76 per patient, as against \$10.06 the previous year.

The average daily number of patients in the hospital during the year was 448, the maximum at any one time being 533, and the minimum 373.

#### MEDICAL NOTES.

**AN HONORARY DEGREE FROM BUDA-PESTH.**—The University of Buda-pesth, among other degrees given in commemoration of its millenium celebration, confers an honorary degree of Doctor of Laws upon Dr. John S. Billings.

**A NEW MEDICAL JOURNAL.**—The first number of the *Laryngoscope*, a new monthly journal devoted to diseases of the nose, throat and ear has been received. It is published in St. Louis and edited by Dr. Frank M. Rumbold and M. A. Goldstein.

**YELLOW FEVER IN CUBA.**—The yellow fever continues to hold sway in Santiago de Cuba, where the general mortality is very high and the sanitary conditions unimproved. In Havana there are about a hundred cases in the hospital, chiefly among the soldiers.

**SMALL-POX IN KEY WEST.**—The small-pox outbreak at Key West continues, there having been some thirty cases up to date with seven deaths. General vaccination is being carried out as fast as the people will permit, there having been a small riot on the removal of patients to the isolating camp.

**AN HEROIC REMEDY.**—It is said that in Malta, where bees are plentiful, bee-stings are in such repute as a cure for rheumatism that resort to this primitive method of inoculation has been in common practice in severe cases for generations, the results having been most satisfactory to the patients. Certainly in Malta an ounce of prevention would be more desirable than "a cure."

**AN ATTEMPT AT RACIAL REFORM.**—According to the *Medico-Surgical Bulletin*, the State Legislature of Connecticut has passed a law making it a felony for a man or woman who is an epileptic, imbecile, or feeble-minded to marry or live together as man and wife when the woman is under forty-five. The penalty is imprisonment for not less than three years, and any person who shall aid or assist, or in any manner countenance such a thing, will be fined not less than \$1,000 or be imprisoned for not less than one year, or both.

**NOISE-SOME GARBAGE COLLECTING.**—Another annoyingly unnecessary street noise has been instituted

in Chicago, this time by official direction. If the inference in the following paragraph is correct, it may be after all better to fill the air with noise than the alleys with refuse: It is the *Chicago Medical Record* which states that "Dr. Mary H. Bowen of Chicago, by arming the garbage wagons with tin horns has accomplished great good on the West Side. On hearing the gentle toot the garbage is promptly brought to the collector, instead of being dumped in the alley. The only solution of the garbage question is a regular house to house visit, and this is a move in the right direction."

**COMPULSORY BATHING IN PUBLIC SCHOOLS.**—In view of the present agitation for introducing compulsory bathing in our public schools the following account of the newly introduced douche in the communal school at Milan, Italy, is of some interest. The correspondent of the *Lancet*, July 11, 1896, describes the experiment as it was made on the first day, in presence of the municipal representatives, the municipal medical adviser, Dr. Bordoni Uffreduzzi, and Dr. Sacchi of the *Ospedale Maggiore*: "Forty boys, accommodated in a disrobing-room fitted with benches, were made to strip and then, covered only by their large drying towel, were told off in relays of five to a contiguous hall, where they were all made to take the douche. Thereafter, provided with soap, they cleansed themselves from head to foot with fresh water, and returned to the disrobing-room to dry and dress themselves. The mechanism of the douche is simple. Five small reservoirs are suspended in a row at a height of two and a half yards from the floor and and furnished, laterally, with two chains. Pulling that on the right, the boy beneath is douched *a colonna* (in a volume of water) or pulling that on the left, he is douched *a pioggia* (in a shower). The *locale* has been modelled on the lines of similar *locales* in barracks, and may be heated in winter. Personal ablution is one of the minor virtues in which modern Italy has fallen behind her classical forerunner, and the Milanese innovation (or rather return to antique usage) may be imitated with advantage, practised as it is under medical surveillance." To what extent the self-assertive youth of this land of freedom will consent to being douched in batches is not easy to assert before a trial.

**THE DIFFERENCE DEFINED.**—The *Bauble* publishes the following verses:

RONDEAU.

"I can't conceive," she archly cried,  
"Wherein you men can longer pride  
Yourself from female rivals free,  
For surely we have grown to be  
Your peers in ev'ry human stride.  
It is a truth that none dare hide;  
Yet why you men will not agree  
To recognize the new decree,  
I can't conceive."

"Now, *entre nous*, won't you confide  
And tell me true, all jokes aside,  
What difference the world can see  
Between your manly self and me?"  
"To tell you truly," he replied,  
"I can't conceive."

**THE NEW MEXICO TERRITORIAL BOARD OF HEALTH AND PATENT MEDICINE BOOKS.**—The Board of Health of New Mexico, in a recent circular for the use of patients having consumption makes the following appreciative recommendation for the use of patent medicine literature: "Every person so affected should spit into some receptacle, and should see that the sputum is soon destroyed by fire. About the house there is no better way than to spit between the leaves of patent medicine almanacs—to be had freely at all drug stores—and after a half-dozen or more spittings burn the book."

BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—During the week ending at noon, July 29, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 46, scarlet fever 18, measles 34, typhoid fever 14.

**THE MAYOR AND CONSUMPTIVES' HOMES.**—As a result of the hearing held on July 16th regarding the order of the Board of Aldermen permitting the building of a large addition to the Free Home for Consumptives on Quincy Street, Boston, Mayor Quincy has sent to the Board his veto of that order, giving the following reasons. The objection of the remonstrants on the score of fire he does not think serious, but says:

"The grounds upon which I withhold my approval are that the granting of this permit would in my opinion definitely commit the city to the policy of allowing not only the permanent continuance of consumptives' homes in residential districts, but also the enlargement of such homes, as may be required by the growth of the demands upon them, and (2) that the Board of Aldermen, which has the power to order the discontinuance of these homes, not only does not seem to have arrived as yet at any definite policy of this nature, but has taken contradictory action in the two cases of this character with which it has recently dealt."

After reviewing the votes of the Board upon the Cullis Home and the Free Home orders, he continues:

"The city can take one of three courses in regard to these homes. It can (1) notify them that their work must be discontinued upon their present locations after a certain time, or (2) allow them to go on and erect new buildings in the expectation of continuing indefinitely upon these locations, or (3) refuse at present to adopt definitely either the one policy or the other, keeping matters in *statu quo* for further action. I have declined to approve the first course, as at present advised, and before I approve the second I think I can properly ask that it shall appear that at least a majority of the whole membership of the Board of Aldermen is definitely committed to it, and prepared to carry it out consistently."

"If this question is again presented to me in any form, I shall take it up with the feeling that consumptives' homes ought not to be either required to re-

move from their present location, or restricted in extending their work, unless it appears that this work can and will be continued elsewhere or otherwise. I do not feel that any action should be taken which would deprive sick and dying consumptives of the humane ministrations of those who conduct these homes, even though it may be shown that the value of real estate in the vicinity is injuriously affected.

"I am also satisfied that if properly conducted they cannot be considered a menace to the health of the neighborhood."

The Board of Aldermen the same evening declined, by a vote of four to six, to pass its order concerning the Cullis Home over the Mayor's veto.

**THE REGISTRATION OF PHYSICIANS IN MASSACHUSETTS.**—The recent examination of candidates for registration in medicine before the State Board of Registration in Medicine resulted in the rejection of 25 out of 198 applicants; Of these 25, 16 were not graduates in medicine. The next examination will be held on September 8th.

**MEDICAL BEQUESTS.**—Among the many generous bequests in the will of the late Mrs. Anna White Dickinson are the following to various medical charities: the Massachusetts General Hospital and the McLean Hospital, \$30,000 each; the New England Hospital for Women, \$25,000; the Massachusetts Charitable Eye and Ear Infirmary, \$15,000; and the Perkins Institution and Massachusetts Asylum for the Blind, \$10,000.

**THE NEW WINSLOW SURGERY AT THE WORCESTER CITY HOSPITAL.**—The formal exercises of presenting the new surgery building to the Worcester, Mass., City Hospital by Colonel Samuel E. Winslow were held Wednesday afternoon, July 22d. The surgery is to be a memorial of his father, the late Samuel Winslow, formerly mayor of Worcester. Addresses were made by Colonel Winslow in presenting the building, and by Hon. A. B. R. Sprague, mayor of the city of Worcester, and Dr. Gage of the Board of Trustees, accepting the gift. A description of the building is given on another page.

#### NEW YORK.

**MR. STEINWAY'S CHARITABLE DISTRIBUTION OF HIS SALARY.**—Mr. William Steinway, head of the firm of Steinway & Co., the large piano manufacturers, has set a very good example for other wealthy men to follow, under similar circumstances. Having been awarded the sum of \$5,000 by the Appellate Division of the Supreme Court for his services as a member of the Rapid Transit Commission, he has contributed the entire amount, in sums of from \$250 to \$500, to various charitable institutions. Among those thus remembered are the St. John's Guild, Mt. Sinai Hospital, German Hospital, Montefiore Home for Chronic Invalids, the Astoria Hospital of Long Island City and St. John's Hospital of Long Island City.

**DEATH OF DR. J. H. MCGIVERN.**—Dr. J. H. McGivern, a prominent practitioner in the Harlem district of New York, died on July 21st at Plymouth, Nova Scotia, and was buried on the 23d at St. John, New Brunswick, his old family home. He came to New York to study medicine, and was graduated from the Medical Department of the University in 1883. He took an active interest in public affairs, and was prominent in the reform campaign of 1894.

#### Miscellany.

#### THE WINSLOW SURGERY OF THE WORCESTER CITY HOSPITAL.

In presenting the new surgical building to the City Hospital at Worcester last week, Colonel Winslow said:

"This operating theatre has been built and equipped as a memorial to Samuel Winslow, who lived in Worcester for many years. We remember him as a calm, just, yet energetic man, whose self-interests were ever made subservient to the well-being of others and whose moral and material support were at all times willingly and freely given to worthy private and public undertakings. It is natural that his family, after careful consideration, should decide upon this form of a memorial which, we hope, will serve on the broadest possible lines to lessen human suffering."

The new building is situated at the east end of the hospital grounds, and connected with the main buildings and the new surgical ward nearly completed by a covered corridor. A hallway eight feet wide and about thirty-five feet long leads through the middle of the building directly to the operating amphitheatre. This circular room has a diameter of thirty-two feet, with raised seats for sixty spectators upon one-half of the room. These seats are raised about five feet from the floor, and are in two tiers. The level is guarded by a brass railing and a metal foot-board protecting the room from the soil of the spectators' boots. The room is lighted by several windows in the upper half of the room and by a glass dome. Artificial light, both gas and electricity, is amply provided, with an excellent arrangement of lighting directly over the operating table. The floor is of terrazzo, with marble baseboards. This flooring scheme is used throughout the whole building—which is in every respect most excellently built for maintaining modern surgical cleanliness. Directly off the operating-room, on one side, is a comfortably arranged consulting-room and library, some eleven by fifteen feet, for the surgeons.

On the left side of the hallway there is the sterilizing-room, eleven by fifteen feet, provided with ample apparatus for sterilizing instruments and dressings, and furnishing hot or cold sterile water. The sterilizers are all arranged for use either by the steam heat of the hospital or by gas-burners. From this room one enters the operating lavatory, with four large, deep bowls for cleansing and immersing the arms of the operators. Next to this room is the instrument-room with the metal and glass instrument cabinets. The etherizing-room measures nine by twelve feet, and opens into the amphitheatre; and it, as well as the recovery-room, is excellently furnished. The

other side of the building from these rooms is occupied by the accident-room and a small private operating-room.

The accident-room, entered also directly from the grounds, is provided, like the operating-room, with enamelled glass tables—with a small instrument cabinet with small sterilizers for dressings, instruments and water, and is exceedingly well lighted. From it, at one end, opens a small recovery-room with a bed for service in emergency cases. The other room opens into the operating-room by a Lugin door so that the two rooms make practically one when desired. This room is lighted by a plate-glass window filling the entire end of the room, and both are furnished with fixed and portable electric lamps. This room is thirteen by fifteen feet. In the surgeons' room each surgeon is provided with a separate locker for his own gowns and paraphernalia. A large, amply furnished bathroom completes the down-stairs equipment. All the generous equipment is throughout of the best glass and hard-enamel work, and of the most compact usefulness. The space in the second story has been finished off more conveniently into a large sewing-room, twelve by twenty-four feet; a general surgical work-room, eleven by fifteen feet; an apparatus- and splint-room, nine by twenty feet; and two large storage-rooms for dressings, etc., in bulk.

The building is of brick with stone trimmings, and is an attractive and harmonious addition to the hospital as well as a generous and very useful gift for the whole city.

#### DISCONTINUANCE OF "CLIMATE AND HEALTH."

The United States Weather Bureau announces that the publication, *Climate and Health*, is to be discontinued with the end of the present fiscal year, June 30, 1896. Vol. II, No. 3, (four weeks ended March 28, 1896), will be the last issue.

It has been deemed necessary to take this action in view of a doubt having arisen as to whether the publication of *Climate and Health* was authorized by the act making appropriation for the Department of Agriculture for the fiscal year ending June 30, 1897.

With the discontinuance of *Climate and Health* will also terminate the weekly collections of the statistics of mortality and morbidity that have heretofore been published therein, and the physicians and health officials who have co-operated with the Weather Bureau in collecting these statistics are requested to return, by mail, under the Departmental frank, all blank forms and franked envelopes on hand upon the receipt of this announcement.

The Chief of the Bureau wishes to express to all co-operators his sincere appreciation of their voluntary services rendered in connection with the publication of *Climate and Health*.

It is the intention of the Chief of the Bureau to have prosecuted during the coming fiscal year a number of special climatologic studies, and it is expected that the statistics collected during the present fiscal year will be of much value in this connection. The results of these special researches will, if their importance justifies the so doing, be published in the form of special bulletins, at such times and in such shapes as the circumstances may warrant and make necessary.

#### THERAPEUTIC NOTE.

**GUAIACUM IN GOUTY CONDITIONS.**—Sir Alfred Garrod, writes the London correspondent of the *Therapeutic Gazette*, at a recent meeting of the Royal Medical and Chirurgical Society, stated that he thought he had been successful in establishing the following points in regard to the action of guaiacum: (1) Guaiacum is innocuous, and may be taken for an indefinite period of time, and looked upon as a condiment rather than as a drug, as harmless as ginger or any other condiment. (2) Guaiacum possesses a considerable power, but less than colchicum, in directly relieving patients suffering from gouty inflammation of any part; it may be given whenever there is but little fever. (3) Guaiacum, taken in the intervals of gouty attacks, has a considerable power of averting their occurrence; in fact, it is a very powerful prophylactic. (4) Guaiacum does not seem to lose its prophylactic power by long-continued use. (5) There are few persons who cannot readily continue the use of guaiacum; for such cases there are other drugs whose prophylactic action is in some respects similar; perhaps serpentary is one of the most powerful of these.

#### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 18, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York . .	1,892,332	1122	665	29.78	6.56	24.08	.32	1.94	
Chicago . .	1,678,967	604	319	40.63	6.97	33.66	2.72	2.72	
Philadelphia . .	1,164,000	596	315	28.78	8.33	25.46	.86	2.38	
Brooklyn . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . .	560,000	—	—	—	—	—	—	—	
Boston . .	494,206	345	198	33.64	7.25	31.16	.29	.87	
Baltimore . .	496,616	270	151	38.11	6.66	32.93	2.22	1.11	
Cincinnati . .	336,000	—	—	—	—	—	—	—	
Cleveland . .	314,637	153	97	30.56	6.50	27.80	2.61	—	
Washington . .	275,600	111	84	32.94	8.54	30.50	.61	.61	
Pittsburg . .	238,617	115	74	43.50	4.36	31.06	.87	—	
Milwaukee . .	266,000	—	—	—	—	—	—	—	
Nashville . .	87,754	44	19	20.43	15.89	13.62	2.27	—	
Charleston . .	65,165	38	17	26.30	13.15	23.67	2.63	—	
Portland . .	40,000	—	—	—	—	—	—	—	
Worcester . .	98,687	43	27	23.30	13.15	20.97	—	—	
Fall River . .	88,020	87	66	65.45	2.38	64.20	—	—	
Lowell . .	84,359	65	38	30.94	10.92	30.94	—	—	
Cambridge . .	61,619	32	18	56.34	9.39	50.00	—	3.13	
Lynn . .	62,356	—	—	—	—	—	—	—	
New Bedford . .	56,254	50	42	64.00	2.00	62.00	—	—	
Springfield . .	51,634	27	19	62.90	7.77	62.90	—	—	
Lawrence . .	52,153	29	20	—	10.35	—	—	—	
Holyoke . .	40,149	—	—	—	—	—	—	—	
Salem . .	34,437	22	6	20.75	4.15	12.45	4.15	4.15	
Brookton . .	33,157	15	8	26.66	20.00	26.66	—	—	
Haverhill . .	30,186	15	11	33.33	—	26.66	—	6.66	
Malden . .	29,706	11	4	45.45	18.18	27.27	9.09	9.09	
Chelsea . .	31,295	17	10	34.98	11.66	23.32	5.88	5.88	
Fitchburg . .	26,394	12	7	50.00	16.66	50.00	—	—	
Newton . .	27,022	12	9	50.00	—	50.00	—	—	
Gloucester . .	21,663	—	—	—	—	—	—	—	
Taunton . .	27,093	16	11	56.25	—	56.25	—	—	
Waltham . .	20,877	6	3	33.33	—	16.66	16.66	—	
Quincy . .	20,712	—	—	—	—	—	—	—	
Pittsfield . .	20,447	6	5	33.33	50.00	33.33	—	—	
Everett . .	18,578	—	—	—	—	—	—	—	
Northampton . .	16,738	—	—	—	—	—	—	—	
Newburyport . .	14,554	6	3	16.66	—	—	16.66	—	
Amesbury . .	10,920	—	—	—	—	—	—	—	

Deaths reported 4,043: under five years of age 2,330; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,644; consumption 300; acute lung diseases 196; diphtheria and croup 72; typhoid fever 44; measles 38; whooping-cough 34; scarlet fever 16; cerebro-spinal meningitis 12; erysipelas and malarial fever 1 each.

From whooping-cough New York 16, Philadelphia 7, Pittsburgh 4, Baltimore 3, Chicago 2, Boston and Washington 1 each. From scarlet fever New York 6, Boston 4, Philadelphia 2, Chicago, Baltimore, Worcester, and New Bedford 1 each. From cerebro-spinal meningitis New York 4, Baltimore, Boston, Worcester and Cambridge 1 each. From erysipelas Boston 1. From malarial fever Nashville 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending July 11th, the death-rate was 19.9. Deaths reported, 4,145; diarrhea 428, measles 163, whooping-cough 131, diphtheria 64, scarlet fever 32, fever 28.

The death-rates ranged from 10.6 in Swansea to 24.5 in Sheffield: Birmingham 21.2, Bradford 13.7, Croydon 14.6, Gateshead 23.3, Hull 22.2, Leeds 21.9, Leicester 17.8, Liverpool 23.2, London 20.9, Manchester 20.4, Newcastle-on-Tyne 19.7, Nottingham 15.4, Portsmouth 19.6.

#### METEOROLOGICAL RECORD

For the week ending July 18th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		Weath'r. •		Rainfall in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S...12	29.95	80	91	70	55	60	58	W.	S.W.	10	15	O.	C.	
M...13	29.96	82	93	72	56	68	62	W.	W.	12	8	F.	O.	
T...14	29.85	74	81	67	66	79	72	N.W.	S.	12	9	O.	F.	
W...15	29.70	76	86	66	80	71	76	S.W.	W.	10	11	R.	O.	
T...16	29.76	72	82	63	69	79	74	N.W.	N.E.	7	5	O.	O.	.36
F...17	30.10	64	70	59	77	71	64	N.	S.E.	8	3	C.	C.	
S...18	30.36	67	74	60	70	67	68	N.E.	S.E.	4	3	C.	C.	.47
														.63

\* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☉ Means for week.

#### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 18, 1896, TO JULY 24, 1896.

Leave of absence for one month is hereby granted CAPTAIN PAUL CLENDENIN, assistant surgeon, Fort Warren, Mass.

The extension of leave of absence granted CAPTAIN GEORGE E. BUSHNELL, assistant surgeon, is further extended one month.

Leave of absence for three months, to take effect on or about August 3, 1896, is granted CAPTAIN EDGAR A. MEARNS, assistant surgeon, Fort Myer, Virginia.

#### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 25, 1896.

L. MORRIS, assistant surgeon, detached from Indian Head Proving Ground, July 18th, ordered home and granted one month's leave.

F. C. COOK, assistant surgeon, July 12th, detached from treatment at the New York Hospital and ordered to proceed home.

G. H. COOK, medical director, detached from special duty at Philadelphia and ordered to take charge of hospital there.

D. KINDLEBERGER, medical director, detached from duty in charge of hospital at Philadelphia, ordered home and await orders.

W. G. FARWELL, medical inspector, ordered to special duty at Philadelphia attending officers.

#### RECENT DEATHS.

CHARLES S. D. FESSENDEN, M.D., U.S.M.H.S. (retired), died in Portland, Me., July 23d, aged seventy-two years. He was born in Portland in 1828, a son of General Samuel Fessenden. He was a graduate of Bowdoin College in the class of 1848 and after studying medicine entered the United States Marine Hospital Service, being at his death the oldest surgeon in that service.

#### BOOKS AND PAMPHLETS RECEIVED.

Announcement, Medico-Chirurgical College, Philadelphia. 1896-97.

Massachusetts Institute of Technology, Boston. The Course in General Studies. 1896.

Clinical Examination of Deaf Mutes. By S. T. Walker, M.A., Jacksonville, Ill. Reprint. 1896.

Annual Announcement of the New York Post-Graduate Medical School and Hospital for 1896-97.

De la Syphilis Conceptionnelle ou Conceptuo-Syphilis. Par le Dr. G. Richard d'Aulnay. Paris, 1896.

Transactions of the Medical Society of the State of New York for the Year 1896. Published by the Society. 1896.

Sponge Grafting in the Orbit for Support of Artificial Eye. By E. Oliver Belt, M.D., Washington, D.C. Reprint. 1896.

The Technics of the Trial Case; or, Subjective Optometry. By A. Edward Davis, A.M., M.D., New York. Reprint. 1896.

The Physical Director in the Second and Nineteenth Centuries. By Edward Morton Schaeffer, M.D., Baltimore. Reprint. 1896.

On Pan-Hysterectomy, or Total Extirpation of the Uterus by Abdominal Section. By Christopher Martin, M.B. Edin., F.R.C.S. Eng. Reprint. 1896.

The "Nursing World" Bedside Record. For the use of Physicians and Trained Nurses. Designed by the Editor of the *Nursing World*, New York: John Carle & Sons.

Some Phases of Syphilis of the Brain. The Localization of Lesions in the Pons and Preoblongata. By Charles K. Mills, M.D., Philadelphia. Reprints. 1896.

Post-Nasal Adenoid Hypertrophy: With Especial Reference to the Importance of its Early Recognition by the Family Physician. By J. E. Schadle, M.D., St. Paul, Minn. Reprint. 1896.

Di una nuova particolarità nella tecnica dell'anestesia locale coccainica. Dott. Tito Costa. Comunicazione fatta al 2° congresso medico Regionale Ligure in S. Remo, Aprile, 1896. Genova.

On the Prevention of Tuberculosis. By Jas. B. Russell, B.A., M.D., LL.D., Senior Medical Officer of Health, Glasgow. Republished, by permission, by the State Board of Health of Massachusetts.

Intra-Ocular Growths. Retinitis and Choroiditis. Valedictory Address to the Graduating Class of the Medico-Chirurgical College of Philadelphia. By L. Webster Fox, M.D., Philadelphia. Reprint. 1896.

The Association of Hemianopsia with Certain Symptom-Groups, chiefly with Reference to the Diagnosis of the Site of the Lesion. By Charles K. Mills, M.D., Philadelphia, and G. E. De Schweinitz, M.D. Reprint. 1896.

The Mulum in Parvo Reference and Dose Book. By C. Henri Leonard, M.A., M.D., Professor of the Medical and Surgical Diseases of Women, Detroit College of Medicine. Flexible leather, 143 pages. Detroit: The Illustrated Medical Journal Co. 1896.

A Manual of Obstetrics. By W. A. Newman Dorland, A.M., M.D., Assistant Demonstrator of Obstetrics, University of Pennsylvania, Instructor in Gynecology in the Philadelphia Polyclinic, etc. With 163 illustrations in the text and 6 full page plates. Philadelphia: W. B. Saunders. 1896.

A Tribute to the Memory of Edward Jenner. Forty Years of Personal Experience in use of Vaccination for the Prevention of Smallpox. By Charles N. Hewitt, M.A., M.D., LL.D., Professor of Public Health in the University, and Executive Officer of the State Board of Health of Minnesota. Reprint. 1896.

Die Mikrotechnik der Thierischen Morphologie. Eine Kritische Darstellung der Mikroskopischen Untersuchungsmethoden. Von Dr. Med. Stefan Apáthy, Professor der Zoologie und vergleichenden Anatomie an der Universität Kolozsvár. Erste Abtheilung. Mit 10 Abbildungen in Holzschnitt. Braunschweig: Harald Bruhn. 1896.

Manual of Midwifery for the Use of Students and Practitioners. By W. E. Fothergill, M.A., B.S. M.B., C.M., Buchanan Scholar in Midwifery, University of Edinburgh, late House Physician to the Simpson Memorial and Edinburgh Maternity Hospital, and Gynecological Wards, Royal Infirmary, Edinburgh, etc. With double colored plate and 69 illustrations in the text. New York: The Macmillan Company. 1896.

Practical Points in Nursing for Nurses in Private Practice. With an Appendix containing rules for feeding the sick; recipes for invalid foods and beverages; weights and measures, dose list; and a full glossary of medical terms and nursing treatment. By Emily A. Stoury, Graduate of the Training-School for Nurses, Lawrence, Mass., Superintendent of Training-School for Nurses, Carney Hospital, South Boston, Mass. Illustrated with 73 engravings in the text and 9 colored and half-tone plates. Philadelphia: W. B. Saunders. 1896.



## Original Articles.

THE TREATMENT OF PHTHISIS IN SANITARIA NEAR OUR HOMES.<sup>1</sup>

BY VINCENT Y. BOWDITCH, M.D., OF BOSTON.

WHEN requested to address you upon the "Home Treatment of Phthisis," I asked permission to change the subject, feeling that I could, perhaps, give you something of greater interest if I attempted to show you the results obtained by the sanitarium treatment of phthisis near our own city, as illustrated by five years' experience at the Sharon Sanitarium for Pulmonary Diseases in Sharon, Mass. In presenting the results of the work there, it is with the hope that the idea of establishing sanatoria for treating tuberculosis may grow steadily in favor, so that instead of small isolated institutions here and there in the United States, we may have in the immediate vicinity of our large cities in every State suitable establishments where people of limited means, who are showing the first signs of consumption, can be sent with the hope of arresting the disease in its early stages, even in insalubrious climates. In Europe, much more rapid advance has been made than in America in the past few years in these matters. Of late, the French government, convinced of the usefulness of such establishments, has taken steps to found sanatoria for consumptives in various parts of the country. Brehmer, the father of the idea of sanitarium treatment for consumption, has left behind him his now great and celebrated sanitarium at Görbersdorf as a proof of the correctness of his views advanced nearly forty years ago. His pupil Dettweiler later established the sanitarium at Falkenstein, near Frankfort, and his name is now as well known throughout the medical world as that of his great predecessor.

Numerous similar institutions in later years have been founded in various parts of Germany, and their results are showing already how much can be done even in the harsh cold winters of North Germany.

In England, Scotland and Ireland also, they are following the examples of the Germans. Even in the damp, chilly climate of eastern Scotland favorable results are being reported at the Craighleith Sanitarium for the consumptive poor near Edinburgh.

The Adirondac Cottage Sanitarium at Saranac Lake, N. Y., and the Winyah at Asheville, N. C., are now well known in America, the former only, however, being intended for people of very moderate means. Others exist in Colorado, Southern California and in the South, but, so far as I know, the Sharon Sanitarium is the only one in New England which is intended exclusively for people of very limited means.

The people of New York City, however, have within the past year founded an institution at Liberty, N. Y., intended for cases of incipient phthisis in connection with consumptive hospitals in the city.

The Rush Hospital for Consumptives in Philadelphia, Pa., and another similar institution near Baltimore, Md., should be mentioned, but I do not understand them to be devoted especially to cases of consumption in its early stages.

As I review the records of the Sanitarium and recall the cases of those in whom arrest of the morbid process has been accomplished, it is gratifying to find that my former belief in the efficacy of such treatment for a good percentage of cases even in our own harsh climate was not unfounded.

In presenting to you these records of five years' experience, I should not be so foolish, of course, as to claim results equal to those coming from a radical change of climate, such as is possible for the wealthier classes, but I merely wish to show, if I can, that what has been accomplished at Sharon is vastly more satisfactory than any attempt, in my experience at least, to treat patients in their homes or at the office in this part of the country.

The reason for this would seem to be obvious. A bright, cheerful home is provided at very slight cost to the patients, where in addition to good food and the excellent air of a healthy country town, medical supervision is kept up at a period of the disease when it is of vital importance that the patient should not be allowed to follow his own inclinations as to exercise, food or general mode of life.<sup>2</sup>

Contrast this with the usual method of treating the poor or even the wealthier class of patients at one's office. It is impossible under such conditions to control as one should the actions of even the most intelligent, and, in such a climate as ours, the results are discouraging to the last degree.

Even at the Sanitarium we inevitably meet with certain cases, of course, which in spite of every effort steadily and surely lose ground; but there are others which after a stay of many months, possibly, at Sharon, have remained in apparent perfect health, and it is these cases which have proved to me how much can be done with comparatively simple means, and how much more can be accomplished with increased facilities for the treatment of consumption when patients are kept under the close supervision of a sanitarium not far from home. You will notice that I have in no case used the word "cure," but have confined myself to the term "arrest of disease," simply because I do not feel that the former term is justifiable until after a number of years in which the patient shows no signs of relapse. If the general appearance, however, of the patient can be taken as an indication of his condition, the term "cure" might certainly have been used in many of the cases which I have reported as "arrested." In some, moreover, who have been away from Sharon for two or three years and report themselves as in perfect health, we should be justified in saying that they stand as good a chance of living long lives as any one, but I have thought it best to adhere to the less absolute term.

In a paper entitled "Three Years' Experience with the Sanitarium Treatment of Phthisis near Boston," I gave to the American Climatological Association at Washington in 1894 the results of forty cases of consumption treated at Sharon. Ten of these were reported as "arrested," and later in this paper I shall hope to give their succeeding histories. The full accounts can be found in the "Transactions of the Climatological Association" for 1894, or in the *Boston Medical and Surgical Journal* of July 12 and 19, 1894.

<sup>1</sup> Read before the Massachusetts Medical Society, June 10, 1896, and recommended for publication by the Society.

<sup>2</sup> The price of board at the Sanitarium is \$5.00 a week, which includes medical attendance, medicines, and everything else but washing. Only women are received at present.

In the past two years, up to March 1, 1896, 26 cases have been admitted to the Sanitarium. Two of these remained less than five weeks and are, therefore, not included. Of 24 cases treated in the past two years, seven who have left the Sanitarium were called "arrested cases," the details of which will be published with this paper. Of the remaining 17, one (No. 64) was a suspicious case without very definite signs except anemia, a slight cough without expectoration, and a questionable dry crepitation near the spine of the left scapula. She left at the end of four months perfectly well, and has remained so since, "never better in her life" at last accounts. This case, however, was not classed with the "arrested" ones, because of the doubtful nature of the trouble.

Twelve others (Nos. 55, 57, 60, 61, 62, 66, 67, 69, 71, 73, 74, 75) were all cases of more or less advanced phthisis in one or both lungs, several of whom were admitted merely as an endeavor to better their condition, with little or no hope of cure. Eight of these showed a greater or less degree of improvement in their general condition; four of them were not benefited. Four others were really incipient cases (Nos. 58, 68, 72, 76), two of whom having opportunities to live in Colorado left Sharon after a stay of three and one-half and six months respectively, with decided improvement in general symptoms, but with no change or a slight increase of local symptoms; one other left after two months, decidedly improved, and one is still at the Sanitarium, the picture of health, with little or no cough, the bacilli having disappeared from the sputa since the early winter.

In addition to the ten "arrested cases" recorded in my paper before the Climatological Association, five who were then under treatment and classed as "much improved" have since been discharged as "arrested cases," the last one having left Sharon a year ago. Of these, four are very well (Nos. 31, 33, 36 and 48), no symptom of return of the disease having yet appeared; one (No. 42), after a stay of nearly two years at the Sanitarium (with the exception of short intervals, during which she had to undergo serious operations at the hospital for uterine disease of unknown nature), left Sharon with the signs of the original lesion in the left lung quite healed, and finally died at the City Hospital following a severe operation for a uterine tumor. Just previous to her death I was able to carefully examine her lungs, and the only trace of her original trouble was a faint, dry click occasionally heard in the left supra-clavicular space upon respiration. This result was corroborated by a member of the staff. Most unfortunately, no autopsy was allowed upon this most interesting case, and the nature of the abdominal tumor was never known. The details of these cases will also be published with this paper.

It is, of course, impossible in any paper to convey the impression made upon the observer by individual cases, and any attempt to recite in detail the results of each case would only weary, without convincing the listener probably. In giving percentages, moreover, there must inevitably arise small sources of error, but in publishing results I have tried to avoid the "personal equation" in the description of cases, and can only emphasize what I have earlier stated, that the number of patients whom I have seen improve or in whom the symptoms of disease have disappeared at the Sanitarium is much greater than I have ever seen

by ordinary methods of so-called "home treatment" in Boston.

I am aware that possibly the diagnosis in some of the published cases may be challenged, because of the failure to discover bacilli in the sputa, when the physical signs were very slight. I can only say in reply to this, what we all surely know, that the absence of bacilli is no proof of the absence of tubercular disease; that in many cases which show undoubted evidences of phthisis, upon physical examination we may fail for months to find bacilli in the sputa, and for myself there are certain evidences of incipient trouble, for example, a change in the character of the percussion note or the respiratory murmur in the apex of a lung in conjunction with general signs of departure from health, like fever, malaise, loss of flesh, etc., that mean infinitely more to me than the mere evidence of the microscope alone, whether positive or negative.

With these remarks as a preface, then let me state that out of 64 cases of phthisis treated in the Sanitarium in the last five years, 22 have been classed as "arrested cases," a little more than 33½ per cent. Of these, four (Nos. 3, 37, 41 and 42) have since died, and in two others (Nos. 1 and 63) the symptoms of disease again appeared not many months after leaving Sharon, but they are still living. Of those who died, however, one showed no evidence of return of pulmonary trouble, but died after a uterine operation; two others resumed, against advice, the same mode of life as before, and pulmonary disease again developed. Another died from some rectal disease, the nature of which could not be known as the patient was lost sight of. Good accounts are obtained of all of the others, as far as pulmonary symptoms are concerned, the majority having left the Sanitarium more than two years ago.

Granting that phthisis in a number of cases is a self-limited disease, and that such cases get well under any conditions (Austin Flint having claimed that about 11 per cent. are probably self-limited), and granting that evidences of tubercular processes are found in the lungs of numbers of people who have died of non-tubercular disease, yet I feel I am justified in maintaining that the results in this comparatively limited number of cases rest on something much more than mere self-limitation of disease, and that they are such as to warrant the establishment of similar institutions near every large city or town.

The work at the Sanitarium has been greatly aided by the almost daily presence of a medical assistant, and of a most efficient matron, a former trained nurse, to whose unremitting care those of the patients who have regained their health largely owe their lives. That still better results can be accomplished by the presence of a resident physician I have no doubt, and it is my earnest desire that at no far distant date, with increased funds, this, with other necessary improvements, will be accomplished.

#### METHODS OF TREATMENT AT THE SANITARIUM.

After many trials of various remedies, I am still convinced that fresh air, sunlight, good food, with judicious exercise, whether in the form of pulmonary gymnastics or otherwise, are the chief factors in whatever good results have thus far been obtained. The so-called "peppermint cure" has been faithfully tried with negative results as far as any curative action is concerned, although it seemed in certain cases to ameliorate some of the symptoms, especially the cough.

It should be said that it was impossible to use the mixture recommended by Curasso, to be taken by the mouth, as the amount of alcohol caused marked symptoms of intoxication, and a modified form was given, the chief ingredients being creosote and oil of peppermint, but the other details of his treatment were closely followed.

Klebs's "Antipthisine" has been used also in several cases, and I regret to say that the results in my hands have not convinced me of its curative power. It has been given carefully in accordance with the recommendations as far as possible, and in one or two cases improvement was noticed, but not more than I have noticed by different methods. Creosote alone has been tried, but without positive proof of its special value in my experience, except as a corrective to the digestion at times. I have never succeeded in giving the large doses recommended by some on account of the intolerance of the stomach for such amounts.

Tuberculin has never been used at Sharon, my experience at the Carney Hospital in South Boston, previous to the opening of the Sanitarium, having convinced me that it was wiser to wait until we have heard more upon the subject from Koch before making further experiments. The methods pursued have been chiefly these: regular hours of sleep; rest in the open air, even in the coldest winter weather, on the piazza in the sunshine; exercise by walking, regulated according to the condition of the patient; pulmonary gymnastics in the form of ordinary calisthenics, to develop the chest muscles, or by means of the pneumatic cabinet, regular treatment with which has a markedly beneficial effect upon the expansion of the chest. When used judiciously I have never seen harmful results from this treatment, and the patients almost universally speak of the sense of freedom in breathing after its use. At times the combination of a medicated vapor with the cabinet has a soothing effect, especially if a general bronchitis is present, but I have no faith in the germicidal effect of any vapor used in this way as sometimes recommended. Pulmonary gymnastics, then, in some form, hold in my opinion a very important place in all methods of cure of consumption, and chief among them stands the pneumatic cabinet or some equally efficacious substitute.

Tonics, in the form of the preparations of the hypophosphites, bitters, malt and iron, are frequently used, and special attention is paid to the condition of the stomach and bowels. Three regular meals in the day, with lunches, usually of egg and milk in the middle of the morning and afternoon, are prescribed, and are varied according to the patients' needs. If patients are found to be feverish, quiet is recommended rather than exercise, but if in their rooms, the windows are always open in degrees varying with the temperature, that the advantages of fresh air treatment may not be lost.

The strictest attention is paid to the care of the sputa, expectoration being allowed only into certain receptacles which are provided for this purpose and are destroyed by fire later. When on the grounds of the Sanitarium the patients are provided with small rubber pouches containing sheets of Japanese paper, which are destroyed after use. Table napkins are of the same material, and the china utensils, spoons and forks are boiled after use at every meal. Dusting and sweeping in the Sanitarium are never allowed, but the floors and walls are wiped frequently with damp cloths,

which are afterwards burned or boiled, by all of which means chances of infection are reduced to a minimum.

Special endeavors are made to procure employment which will enable the patients after they leave Sharon to be more in the open air than in their previous occupations, and it has been gratifying to find how many continue to practise the hygienic methods and gymnastic exercises which have been taught them in the Sanitarium.

It may be well for me to refer to what I have alluded to in previous papers, namely, the idea that the presence of others who are ill in the same institution has a deleterious mental effect upon the patients. As a matter of fact, this objection, which doubtless exists in the minds of many, amounts, not only in my experience but in that of every physician who has had control of a properly regulated sanitarium, to practically nothing when compared with the advantage to be gained. It has surprised me frequently to see how soon patients become wonted to their changed method of life after the first inevitable sense of strangeness and homesickness wears off, and how quickly they become cheerful and often happy in their surroundings. Depression comes usually from some outside source or from a cause other than the mere presence of other invalids.

As to the danger of infection in institutions where proper precautions are used, I believe it to be very slight, and the lately published paper of Dr. Irwin W. Hance, entitled "Study of the Infectiousness of Dust in the Adirondac Cottage Sanitarium," shows in a most interesting way how little we have to fear on that ground in such establishments where absolute cleanliness of the patient and his surroundings is insisted upon.

In conclusion let me say, that I should regret it very much if in my scepticism as to the curative power of any of the so-called specific treatments for phthisis thus far invented I were to give a false impression as to my own hope and belief. I cannot help feeling that we are on the eve of a new epoch in the history of tuberculosis. Steadily and surely, although slowly, I believe we are approaching the time when phthisis may be regarded as we now regard the plague and small-pox, diseases which were once the terror of the human race, but which are now either unknown in civilized communities, or so far under control that they are no longer so much dreaded.

Preventive medicine, with its teachings of proper hygienic surroundings for those who show a tendency to weakened constitutions, either acquired or inherited, has played a most important part in the already noticeable decrease in the mortality from consumption, and to bacteriology we owe the great advance which has been made in our ability of late years to recognize the signs of incipient disease and to grapple successfully with them.

Let us, therefore, hopefully, cautiously and patiently work in the lines that experience teaches us will give the best results. If I shall have been able to convince you that the sanitarium treatment of consumption, even in harsh climates, takes a very high rank among the methods of combating this disease, and if in so doing I can induce you to promulgate the idea, not only among the medical profession but in the community generally, the object of this paper will have been accomplished.

RECORDS OF SEVEN CASES OF "ARRESTED DISEASES"  
SINCE THE PREVIOUS REPORT IN 1894.

**CASE I.** (No. 51.) American. Married. Age thirty-one. Entered January 31, 1894. Mother died of phthisis. Pneumonia four years before, and "congestion of lungs" eighteen months previous to entrance. Slight cough and occasional hemoptysis since. Loss of flesh, malaise, slight fever.

**Physical Examination.**—Dulness in upper portion of right lung, with crumpling râles, varying in intensity over most of the lung. A little later, a few râles in top of left lung. *Bacilli in sputa.* Cough persisted, although lessening, for six months, after which it practically ceased. Temperature became normal. Gain of twenty-five pounds in weight. Left the Sanitarium one year and a half after entrance.

**Synopsis.**—Catarrhal phthisis of both lungs. Arrest of disease after a stay of one and a half years at the Sanitarium. Patient at this time, eleven months after departure, to all appearances well; the last examination showing dry râles in the apices and in lower part of right chest, but the percussion in both of good character. No cough.

**CASE II.** (No. 53.) Entered May 14, 1894. American. Married. Age thirty-three. Very phthisical family history. Has for several years had a pain in lower right chest, and a cough. For eight months previous to entrance cough was severe, with a good deal of sputa, occasionally bloody. Loss of flesh and strength.

**Physical Examination.**—Thin and pale. Right clavicle prominent. Tenderness upon percussion. Respiration jerky there. Percussion slightly dull, also in middle third of right back. No special râles detected. Pulse 108. Temperature 100°. *Bacilli could not be found.* Condition slowly improved. Cough and expectoration ceased. Gain of twenty-two pounds in weight. Left the Sanitarium thirteen months after entrance, feeling well and stronger than for many years before.

**Synopsis.**—Incipient phthisis of right lung. Arrest of disease after thirteen months' stay at the Sanitarium.

**CASE III.** (No. 56.) Entered June 27, 1894. Nova Scotian. Single. Age twenty-four. Domestic. Two maternal aunts died of phthisis. Never very strong. Following an attack of tonsillitis a year before entrance, a slight cough with profuse expectoration, occasionally bloody, developed. Occasional night sweats. Pain in left side for two months. Catarrh troublesome.

**Physical Examination.**—Slight dulness in right apex, a "squeak" heard there once, with broncho-vesicular respiration and a questionable "crumple." Nothing over seat of pain. Temperature 99.3°. Pulse 100. Barring a slight hemorrhage soon after entrance, there was steady improvement in all symptoms. Cough and expectoration ceased and catarrhal symptoms greatly improved. *No bacilli found.* Patient left the Sanitarium against advice after a two months' stay, feeling very well; the percussion in the right apex being normal and no evidence of râle there.

**Synopsis.**—Incipient phthisis at right apex. Disappearance of signs after two months' stay at Sharon.

**CASE IV.** (No. 59.) Entered July 30, 1894. Sent by Dr. J. J. Minot. American. Single. Age nineteen. Mother and one sister died of phthisis; later, a brother developed phthisis. Two years previously had taken care of a sick sister, and later, in winter preceding entrance, took cold and began to cough, which became less in the spring. Loss of flesh. Occasional pain in the right subscapular region.

**Physical Examination.**—Dull in upper right back with faint "squeak," and after cough an explosion of râles. Slight tubular respiration. Respiration decidedly broncho-vesicular in both apices. Voice increased in both apices. Pulse 100. Temperature 99.3°. *Bacilli in sputa.* There was marked improvement from the outset. At the end of six months there was a cessation of cough and the bacilli had disappeared from the sputa when any could be obtained. The temperature became normal, and for the past year the patient has been the picture of health, and re-

mained at the Sanitarium merely as a matter of precaution previous to living in the West. Gain of nineteen pounds in weight. At the last examination the percussion in the apices had greatly improved, and although the respiration was broncho-vesicular in both tops, and after cough a few râles could be heard, yet the whole sound was of a dry character. The general signs had been those of an arrested process for a year previous to departure.

**Synopsis.**—Incipient phthisis in both apices. Arrest of disease at the end of six months, the patient remaining in the Sanitarium twenty-one months.

**CASE V.** (No. 63.) Entered November 7, 1894. American. Married. Age twenty-three. One aunt died of phthisis. Two and a half months previous to entrance developed a cough, with profuse expectoration. Some loss of flesh, chilliness, malaise.

**Physical Examination.**—Lack of tone in apices and faulty expansion of the chest. Slightly higher-pitched note in left apex behind. Suspicion of a dry râle about spine of left scapula. Slight elevation of temperature. *Sputa negative.* The cough and expectoration rapidly diminished and finally ceased. The expansion of chest and percussion greatly improved by the use of pulmonary gymnastics. Patient left against advice, feeling very well, at the end of three months, as a doubtful case of incipient phthisis. Gain of nine pounds.

**Synopsis.**—Probable incipient phthisis at the top of left lung. Arrest of morbid signs at the end of three months' stay.

**Subsequent History.**—Patient returned to hard work in unhygienic surroundings. Had whooping-cough later, and in June, 1895, was re-admitted, with evident signs of phthisis at the top of the left lung. *Bacilli in the sputa.* Owing to disobedience of rules and refusal of treatment the patient was discharged at the end of three months, with only slight improvement of general symptoms.

This case is shown as illustrating how the absence of bacilli in the early history was no proof of the non-existence of tubercular disease, and yet the physical signs pointed towards the existence of phthisis, which was proved several months later when the patient reentered the Sanitarium.

**CASE VI.** (No. 65.) Entered January 8th, 1895. American. Single. Age twenty-four. Lives at home. Sent by Dr. George G. Sears. Family history negative, with exception of asthma in father's family. Seven years before had been anemic. A year and a half previous to entrance had *la grippe*, and continued to lose flesh, and had a slight cough without much sputa. Malaise and anorexia, dyspnea and palpitation. Just before entrance Dr. Sears had found some moist râles at the left apex.

**Physical Examination.**—Anemic. Rather high-pitched percussion note in apices and sub-clavicular spaces, more noticeable in apices in the back. Respiration decidedly broncho-vesicular in both apices, most marked behind, with increased voice sounds. Later, diminution of respiratory murmur in lower left chest. Temperature 100°. Pulse 88. *Examination of sputa negative.* The patient remained four months, gained twenty-one pounds, looked the picture of health; cough and expectoration ceased entirely, and temperature became normal. Although the respiration remained broncho-vesicular in the apices, yet all other signs pointed to a complete cessation of any morbid process. She was advised to stay longer, but was obliged to leave.

**Synopsis.**—Case of incipient phthisis in one apex at least. Complete cessation of all morbid symptoms after four months. Gain of twenty-one pounds in weight. Subsequent history excellent.

**CASE VII.** (No. 70.) Entered June 22, 1895. American. Single. Age sixteen. Mother and sister died of phthisis. Dry hacking cough nine months previous to entrance. Slight amount of blood. Other symptoms not marked.

**Physical Examination.**—Slight dulness in right supra-clavicular space, and lacking in tone in both apices. Explosion of moist râles in both tops to second ribs. Less marked in back. Respiration faintly bronchial. Voice slightly increased. Temperature 100.8°. Pulse 112. *Ex-*

amination for bacilli negative. Steady improvement from the outset. Cessation of cough and sputa. Gain of fifteen and one-fourth pounds in weight. The physical signs became dry in character, although they persisted at the apices after entire cessation of cough and expectoration. Patient left against advice in three months.

*Synopsis.*—Incipient phthisis at both apices. Patient was discharged as "greatly improved" at the end of three months, although the cessation of cough and expectoration, the normal temperature and the general appearance of health justified the term "arrest of disease."

RECORDS OF FIVE CASES PREVIOUSLY RECORDED IN AN EARLIER PAPER AS "MUCH IMPROVED," SINCE DISCHARGED AS "ARRESTED CASES."

CASE I. (No. 31.) Entered May 31, 1892. Sent by Dr. C. Ellery Stedman. American. Age seventeen. Family history bad: father, one sister, one adopted sister, and later a brother, died of phthisis. Perfectly well until one month previous to entrance, then took cold, and a cough with little or no sputa persisted. Loss of flesh and strength, pain in chest and soreness.

*Physical Examination.*—Pale, dark under the eyes. Slight dullness down to the third rib in left top, also in left apex behind. Respiration a little jerky in this region, no definite râle, but in the supra-clavicular space a faint "crumple" with full breath. Voice a little "nearer" in right apex. Temperature 99.8°. Pulse 98. One month later the "crumple" had disappeared, but the jerky respiration continued. Respiration in right apex broncho-vesicular and voice faintly bronchophonic. In the lower right back, especially between the scapula and vertebral column, moist râles. During her stay of a little over two years she expectorated blood once, and the respiration in the lower right back became in a circumscribed area rather bronchial, but upon the last examination only faint dry râles could be heard after cough, with obscurity of respiration, but the percussion note had everywhere improved greatly. The temperature and pulse fluctuated from time to time, but at the last became normal. *No bacilli were found at any time.* Gain of twenty-seven pounds in weight.

*Subsequent History.*—For two years has felt perfectly well. One brother has since died of acute tuberculosis, but she has had no return of abnormal symptoms.

CASE II. (No. 33.) Entered July 23, 1892. American. Age nineteen. Single. Worker in box factory. Family history negative. For some months weakness, cough with whitish starchy sputa, three times slight amount of blood; severe headache; night sweats, loss of flesh, dyspnea upon exertion; occasionally feverish.

*Physical Examination.*—Except for slight increase in the expiratory murmur in the right apex in front, and broncho-vesicular respiration in the upper right back, little to be found in chest. Anemia present, and sclerotics very clear. Temperature slightly elevated. Pulse rapid. Later, slight dullness developed in the right apex, and respiration was jerky. *Bacilli in sputa.* Occasional slight hemoptysis occurred, but patient steadily improved, and at the end of two years left the hospital and is now very well. At the last examination there was little or nothing abnormal to find in the chest. Gain of thirty-four pounds in weight.

*Synopsis.*—Incipient phthisis at top of right lung. The patient was of very nervous disposition and, although the temperature never rose very high, it was always slightly elevated, and was just above normal towards the last. Arrest of disease after a stay of two years. Patient has remained well since.

CASE III. (No. 36.) Entered October 5, 1892. American. Age twenty-two. Single. Clerk. Family history: mother, two aunts and two uncles died of phthisis. Never vigorous. Two months previous to entrance about a half-cupful of blood was expectorated. Slight hacking cough with slight yellow expectoration. Loss of twenty pounds of flesh.

*Physical Examination.*—No dullness, but in both apices, in front and behind, rather coarse "clicks" with inspiration. No bronchial respiration. In left back, near spine

of scapula, circumscribed area of slight broncho-vesicular respiration with increase of voice sounds. Temperature 100°. Pulse 100. *Bacilli were found in the sputa.* The patient had occasional hemoptysis, and the cough persisted for months; but at the end of two and one-half years she left Sharon looking and feeling well and strong, the cough and bloody expectoration having disappeared, faint, snapping râles in the apices still being noticed. Gain of seventeen pounds.

*Synopsis.*—Incipient phthisis at apices. Arrest of disease after two years' stay at Sharon. Patient has remained very well since, with no symptom of return of trouble (one year).

CASE IV. (No. 42.) Entered January 25, 1893. Irish. Single. Age twenty-five. Domestic. Never was strong. Family history: one sister died of phthisis, otherwise negative. Previous history of uterine trouble for which she was treated at the City Hospital; malarial fever and *la grippe* six months before entrance. Six months previously caught a severe cold; bad cough for four months, with muco-purulent sputa; pain in upper left chest and shoulder; palpitation; much loss of flesh, anorexia, dyspepsia; irregular and painful menstruation.

*Physical Examination.*—Slight dullness in right apex, lack of tone in both apices. Respiration obscure in apices, and a questionable "crumple" in the right top front and back. The patient, during her stay of nearly two years, improved greatly in general conditions; had one or two attacks of general bronchitis. At one time faint clicks could be heard in both apices, and whispered voice was increased at these points. On account of the uterine condition, however, she was obliged to go to the New England Hospital, and later to the City Hospital, but previous to her departure all signs had cleared from the chest; the percussion was good throughout, and only an occasional dry "click" could be heard at the supra-clavicular space. Temperature 99.8°. Pulse 94. *Bacilli were found in the sputa.* Gain of five pounds in weight.

*Synopsis.*—Incipient phthisis at both apices, with intercurrent attacks of acute bronchitis and complicated with severe uterine trouble requiring operations. Complete cessation of cough and expectoration and clearing of morbid pulmonary signs after a nearly two years' stay at the Sanitarium. No recurrence of pulmonary disease. Death following uterine operation about one-year later.

CASE V. (No. 49.) Entered July 27, 1890. Irish. Age twenty-eight. Single. Domestic. Family history bad: two brothers, two sisters and father died of pulmonary disease. History of illness five years before, with pain in the right side, but no cough, and was not in bed. Was told at the time by a doctor in Ireland that she had consumption and would not get well. Came to America three years before entrance, and was well until two months previously, when she had a hemorrhage without previous warning. Short cough with scanty sputa, malaise, loss of flesh, anorexia, pain in right chest.

*Physical Examination.*—Large frame. Tenderness at right apex. In middle of right back, slight dullness; respiration not so free as on left. Two months later moist râles developed over point of dullness in right back. Temperature 100°. Pulse 88. *Bacilli and elastic fibres in the sputa.* Fourteen months later the patient left Sharon, having had no cough or expectoration for several months, and having been well, as far as general appearance goes, for six months. Splendid specimen of health. Gain of twenty-six and one-half pounds in weight. The slight dullness in right back persisted, but the râles disappeared.

*Synopsis.*—Case of incipient phthisis in right lung with hemorrhages. Complete arrest of disease after fourteen months' stay at Sharon. Patient perfectly well and strong up to the present time; "never so well in her life before." No sign of cough or ill health since leaving Sharon.

A "GREEN CROSS" Society has been organized in Vienna, its object being to render medical aid to Alpine climbers and to instruct guides in "first aid."

found; but, as above said, an increase of these cells in the blood of any one case is a bad sign.

#### WHITE CORPUSCLES.

(1) The differential count shows usually a marked increase in the percentage of small lymphocytes at the expense of the polymorphonuclear cells. Thus the average of small mononuclear in these 84 counts was 35.4 per cent. and of the polymorphonuclear 58 per cent., the normal percentages being about 23 and 70. As death approaches, this abnormality sometimes grows more and more marked (*vide* Cases I, IX), the lymphocytes rising as high as 70 per cent., as in Case XVII. The large lymphocytes (large mononuclear and transitional, Ehrlich) are usually slightly, if at all, increased. The eosinophiles are, as a rule, slightly more numerous than normal, averaging 3.1 per cent. in this series and rising once as high as 6.6 per cent.

Of particular interest to me is the almost constant presence in this series of *small percentages of myelocytes*. In only 5 of the 85 cases examined by the writer were myelocytes absent, and one of these 5 cases was the first pernicious case I had ever seen, so that I was not on the lookout for myelocytes, there being at that time no reference to them in literature in connection with this disease.

Since in 80 out of 85 cases myelocytes were present, the presence of these cells in pernicious anemia seems to me fairly constant. The larger forms of the cell were those most often seen, the smaller forms being rarer than in leucemia.<sup>4</sup>

The highest percentages found were 10 per cent. (Case XXIV), 9.2 per cent. (Case IV) and 8.8 per cent. (Case II). The average (in advanced stages of the disease) was 2.7 per cent.; earlier in the course of the disease the percentage is usually lower, but there are exceptions to this.

The finding of myelocytes in grave anemias is by no means new, but has not as yet got into the text-books.

(1) Hayem<sup>5</sup> speaks of cells apparently myelocytes (he did not use Erlich's methods) in cases of extreme anemia.

(2) E. Krebs<sup>6</sup> found them in severe anemia.

(3) Loos<sup>7</sup> describes them in the anemia of hereditary syphilis, and Rille<sup>8</sup> finds them in the anemia of acquired syphilis.

(4) Neusser<sup>9</sup> mentions their presence both in pernicious anemia and in chlorosis.

(5) Hammerschlag<sup>10</sup> made a similar observation.

(6) Engel<sup>11</sup> noted their presence in a case of what he cautiously calls "pseudo-pernicious anemia."

(7) Arnold<sup>12</sup> mentions them.

(8) Klein<sup>13</sup> gives a list of various diseases (besides leucemia), in which they have been found many of which are essentially anemic conditions.

(9) The writer<sup>14</sup> found them especially in the anemia secondary to malignant disease.

#### SUMMARY.

The points most typical in the blood of pernicious

<sup>4</sup> *Vide* Boston Medical and Surgical Journal, January 2, 1896: The Myelocyte of Erlich.

<sup>5</sup> Du Sang, Paris, 1889, p. 282.

<sup>6</sup> Inaug. Dissert. Berlin, 1892.

<sup>7</sup> Wien. klin. Woch., 1892, p. 291.

<sup>8</sup> Loc. cit., 1893, No. 9.

<sup>9</sup> Loc. cit., 1892, No. 42.

<sup>10</sup> Berlin. klin. Woch., August 20, 1894.

<sup>11</sup> Virchow's Archiv., vol. cxxxv.

<sup>12</sup> Loc. cit., vol. cxi.

<sup>13</sup> Volkmann's Sammlerung klin. Virtrag., December, 1893.

<sup>14</sup> Boston Medical and Surgical Journal, loc. cit.

anemia, judging from this series of cases, would seem to be the following:

(1) A reduction of the number of red cells to about 1,000,000.

(2) The absence of leucocytosis.

(3) Possibly a relatively high percentage of hemoglobin in some cases.

(4) Increase in average diameter of the red cells.

(5) The presence of large numbers of polychromatophilic red cells.

(6) The presence of nucleated red cells, a minority being normoblasts.

(7) The presence of myelocytes.

(8) A relatively high percentage of small lymphocytes at the expense of the polymorphonuclear cells.

#### AUTOPSY.

Our eight autopsies brought out nothing not already well known. Fatty degeneration and pallor of all organs is noted in all, the "tiger lily" heart in six; pericardial and peritoneal ecchymoses are recorded in four. The bright red color of the muscles is mentioned in five. The spleen was slightly enlarged in two; no enlargement of lymphatic glands occurred.

The marrow was examined in five cases, showing in all a notably red color in the shaft of the long bones. No microscopic appearances are recorded. No complications in any case.

#### SOME EXPERIMENTAL WORK ON LUMBAR PUNCTURE OF THE SUBARACHNOID SPACE.<sup>1</sup>

BY A. H. WENTWORTH, M.D.,

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THE object of this paper is three-fold:

(1) To show that the withdrawal of fluid from the subarachnoid space by means of lumbar puncture is a harmless procedure.

(2) To show that the slightest cloudiness present at the time when the fluid is withdrawn, and caused by the presence of cells in the fluid; and the formation of fibrin in the fluid after it has stood for several hours, are pathognomonic of an inflammatory exudation in the meninges and are never absent in cases of meningitis.

(3) To show that the normal fluid is absolutely clear and free from all cellular elements and fibrin.

I performed the operation of lumbar puncture for the first time in August, 1895, on a doubtful case of tubercular meningitis. A brief report of this case was published in the *Boston Medical and Surgical Journal* of December 12, 1895. After allowing five or six cubic centimetres of fluid to escape, the needle was withdrawn. Immediately following this, the patient showed alarming symptoms. Her pulse rose to 250 beats in the minute (counted with a stethoscope); she clutched at her hair, tossed herself about the bed and uttered sharp cries. Her color was not good and her extremities became cool. Subcutaneous injections of ether and brandy were given and heaters were applied. After one-half to three-quarters of an hour the symptoms had passed away. During the attack I felt considerable uneasiness because I was unprepared

<sup>1</sup> From the Sears' Pathological Laboratory of the Harvard Medical School. This paper was read before the Clinical Section of the Suffolk District Medical Society, April 15, 1896, and also at the Annual Meeting of the American Pediatric Society in Montreal, May 27, 1896.



for such a result and did not know but that it would terminate fatally. I now believe that the symptoms were due to headache, caused by the removal of fluid, and that her life was not endangered.

This patient did not have meningitis, and left the hospital shortly afterward, perfectly well. At the time, I tried to explain the symptoms by assuming that the sudden alteration in intracranial pressure had caused them.

In cases of meningitis there is an increase in the amount of fluid in the subarachnoid space and the withdrawal of some of it tends to relieve the increased pressure temporarily. But if there were no increase in the amount of fluid, it appeared to me possible that the disturbance of the normal pressure might be a dangerous procedure. If this were so, the operation could not be considered so harmless as was generally supposed. After several months' consideration I resolved to try some control experiments on normal cases in order to determine whether or not the operation was a dangerous one.

The diagnostic value of puncture of the subarachnoid space is so evident that I considered myself justified in incurring some risk in order to settle the question of its danger. If it proved to be harmless, then one need not wait until a patient became moribund before resorting to it.

The differential diagnosis between the various forms of meningitis and many other diseases, especially in infants and children, frequently presents great difficulties and is often incorrectly made. Any one who has had opportunities for observing infants and young children knows how variable their symptoms are, and with how much less certainty one can predict the reaction which will follow a given condition than in the case of an adult. For these reasons it is of the utmost importance to possess a reliable means of diagnosing so common a disease as meningitis. In this connection it appears to me to be of primary importance to diagnose the meningitis and secondarily to determine the variety.

It may not be superfluous to describe the methods of procedure and to allude to some of the contingencies which may occur.

The back of the patient, from the last three ribs downward to the sacrum was thoroughly cleaned with alcohol, ether and a solution of corrosive sublimate (1 to 2,000). It is hardly necessary to say that the operator's hands should be thoroughly cleaned and disinfected. The needle was boiled for ten minutes.

An antitoxin needle is preferable to an ordinary hypodermic needle; it is less liable to break and has a larger lumen, besides being somewhat longer. The one used on children over three years of age was four and one-half centimetres long, with a diameter of one and one-half millimetres. For infants under three a needle four centimetres long, with a diameter of one millimetre, was used. A syringe is never necessary, but it is well to have a sterile wire to pass through the needle, *in situ*, in case the fluid does not run well.

Most of the punctures were made between the third and fourth lumbar vertebrae; others were made between the second and third. All of the punctures were made with the patient lying on the right side, and it was found that the position of the patient was an important detail in rendering the operation difficult or easy. It is well to have the patient bent somewhat forward so as to separate the spinous processes, and

what is of more importance, to have the spinal column presented directly toward the operator, so that the back forms an obtuse angle with the table or bed. This enables the operator to control the direction of the needle better because he thrusts the needle directly forwards rather than from the side. In some cases when this position of the patient was not carefully observed it was found that the point of the needle crossed the median line toward the left and struck on the bone.

All of the work was done on infants and children, and on them it is not difficult to find the third or fourth lumbar vertebra without trying to remember various lines and landmarks. The free end of the last rib was found and traced back to its articulation with the last dorsal vertebra, and from this point it was easy to count the spinous processes downward. The left thumb was pressed in the space between the spinous processes, and the needle was entered about one centimetre to the right of the median line on a level with the thumb and thrust somewhat inwards and slightly upwards.

The pain appeared to be slight and the depth of the puncture varied from two to three centimetres, depending upon the age and development of the patient.

As a rule, when the needle enters the canal the fluid flows, usually by drops. A little practice enables one to judge quite accurately whether the needle is in the canal or not. It is well before performing the operation for the first time to examine the spinal column of a skeleton. If the needle does not enter the canal, or if it feels as if the point were not free, it is advisable to withdraw the needle very carefully for a short distance and not to make lateral movements with it, because this procedure is very apt to cause a slight hemorrhage and the fluid which is obtained later is cloudy from the admixture of blood. This obscures the macroscopic, and to some extent the microscopic, appearances of the fluid. It is well to always sterilize the needle with a wire in it so as to be sure the lumen is clear. In one case this was not done, and the needle had to be withdrawn and cleared.

Raising the shoulders of the patient does not always make the fluid run faster. For diagnosis a small quantity of fluid is sufficient. Ordinarily four or five cubic centimetres suffices.

The fluid should be collected in an absolutely clean and sterile test-tube which has previously been stoppered with cotton.

The first control experiment was made on a case of empyema. Preparations were made for an emergency, and nothing alarming occurred. The momentary pain of the puncture caused the patient to shrink and cry out, and that was all. A syringe was then applied to the needle and eight cubic centimetres of fluid were aspirated, but no ill effects were perceived.

I have performed the operation forty-five times and have never seen any ill effects, so that I feel assured it is a harmless procedure. It is obvious that large numbers are required to base accurate statistics upon, but the entire absence of any symptoms in the cases thus far observed has reassured me.

The next point which I wish to emphasize is one which has received little or no attention in the literature on the subject, and yet is of the utmost importance.

During the course of the experiments it was observed that the fluid from normal cases differed in appearance from the fluid from cases in which some inflammatory



process was present in the meninges. In the former the fluid was absolutely clear, looking exactly like distilled water, while in the latter the fluid was invariably cloudy. The cloudiness was caused by a finely divided sediment suspended in the fluid. This sediment was found on microscopic examination to consist of mononuclear and polynuclear cells. After standing a few hours it contained more or less fibrin, evidently, then, an inflammatory exudation.

The normal fluid, even after standing for several days in a sterile test-tube, showed no cloudiness or any sediment at the bottom.

Writers hitherto have laid especial stress upon finding tubercle bacilli, or a more or less purulent or turbid fluid.

The finding of tubercle bacilli requires more technical knowledge of staining methods than the majority of practitioners possess, and in addition, the recognition of tubercle bacilli is not invariably easy. On the other hand, to distinguish between a perfectly clear fluid like distilled water and one in which there is even the slightest cloudiness, is not difficult, if the fluid is held against the light and gently shaken. Later the slight sediment which has collected at the bottom of the test-tube can be easily examined to see if it contains cells and fibrin. This gives one the diagnosis of an inflammatory exudation; and the variety of inflammation, as regards the etiology, may be determined by appropriate methods of examination.

The importance of this seems to have been overlooked in the articles which have thus far been written on lumbar puncture. I will quote from Dr. G. W. Jacobi's article on lumbar puncture in the *New York Medical Journal* of December 28, 1895, and January 4, 1896, in which he refers several times to the perfectly clear fluid which may be withdrawn in tubercular meningitis. For example, on page 8, January 4, referring to the examination for tubercle bacilli, he says: "the best way is to allow the fluid, which is perfectly clear as is the normal fluid, to stand in a funnel-shaped glass for twelve hours and then to gently lift out the web-like coagulum which has formed, etc." This "web-like coagulum" is composed of fibrin, which forms later in the fluid after withdrawal, but the slight cloudiness, to which I have alluded, is due to cells and is present from the first, and the fluid is not perfectly clear like the normal fluid.

Again, in reference to the differential diagnosis between tubercular meningitis, purulent meningitis and abscess, he says: "If a fluid is obtained which is clear and serous and contains no tubercle bacilli, we may nevertheless be dealing with a case of tubercular meningitis, or even with purulent meningitis; but if, as stated, the fluid is clear and serous, and we find neither pus nor tubercle bacilli, it may nevertheless be one of those mentioned forms of meningitis, or it may be a tumor, abscess or a simple meningitis." This, he says, is acknowledged by all writers upon the subject, and emphasized by Stadelmann recently. My experiments, thus far, are entirely at variance with these assertions, and I can only suppose that the slight cloudiness has been overlooked. Unless carefully examined the fluid often appears perfectly clear.

Any one who has searched for tubercle bacilli knows how difficult they are to find oftentimes, and especially so in the cerebro-spinal fluid. In the sputum in cases of tuberculosis of the lungs, where there is usually more or less destruction of the lung tissue,

tubercle bacilli are not infrequently difficult to find. How much more so then in tubercular meningitis where the process consists oftentimes of a few miliary tubercles in the pia at the base of the brain and along the fissures of Sylvius and Rolando, together with more or less inflammatory exudation!

In these experiments, guinea-pigs were inoculated with the fluid from those cases of meningitis upon which it seemed probable that an autopsy would not be permitted, in order to avoid the risk of losing the necessary confirmation of the diagnosis, which might have been lacking if the diagnosis had depended upon the demonstration of tubercle bacilli. I admit that I did not examine twenty, or more, cover-glass preparations as most of the observers have done. The experiments were not made with the view of demonstrating how frequently tubercle bacilli occurred in the spinal fluid, but were made to prove that the occurrence of cloudiness, however slight, due to cells, denoted an inflammatory process in the meninges and was invariably present in cases of meningitis.

All inflammatory processes are accompanied by the exudation of serum and cells, and there is no anatomical reason why this exudation in cases of meningitis should not become mixed with the cerebro-spinal fluid and appear in the fluid which one withdraws from the subarachnoid space, except possibly in cases of abscess of the brain it is sufficiently encapsulated to prevent this admixture. On this point I am uncertain because I have seen no cases.

Cultures were frequently taken in the normal cases as well as in the abnormal ones, simply to make the examination more complete. They were invariably sterile, except in two cases of cerebro-spinal meningitis, in which pure cultures of *diplococcus lanceolatus* were found, in one case of purulent meningitis, due to extension from the middle ear, which communicated with the air and in which a mixture of organisms was found, and in a case of general infection with the *staphylococcus pyogenes aureus*.

The routine method of examination was as follows:

The fluid was immediately examined by holding the test-tube toward the light and gently shaking it to determine if the fluid were cloudy or not. This was done because at times the sediment is so finely divided and so slight that it might escape detection if not examined carefully. (One can have a second test-tube containing clear fluid like distilled water for comparison, but it is not essential.) Cultures were immediately made on blood-serum in all cases in which the fluid was cloudy, and in a number of normal cases. The fluid was then allowed to stand for several hours, after restoppering the test-tube with cotton.

If the fluid were clear at first, it remained so for days, and showed no sediment at the bottom, if taken in a sterile test-tube and not contaminated. If it were cloudy, the suspended particles settled to the bottom and formed more or less sediment, depending on the cloudiness. Usually fibrin was formed later, which contained the cells in its meshes. In either case the supernatant fluid was left perfectly clear.

Cover-glass preparations were made from the sediment, dried, and stained with Löffler's methylene blue, which stains the nuclei of the white corpuscles and also any bacteria which may be present. These cover-glass preparations were examined with an oil immersion lens, although a dry lens will serve all purposes so far as distinguishing the white corpuscles is con-

cerned. Two or three times, cover-glass preparations were stained for tubercle bacilli, but, as a rule, this was not done, because inoculation experiments were relied upon to determine the presence of tubercle bacilli, and the cultures and Löffler's stain determined the presence or absence of pyogenic organisms.

Tests for albumin were made later by means of the nitric acid, and acetic acid and heat tests. The albumin was frequently quantitated by means of the ferrocyanide of potassium and acetic acid test and a centrifugal machine. The tests for albumin were not made for its diagnostic value, but because there appeared to be an error on the part of some observers, who claimed that it varied from one-half to one per cent. in the normal fluid, and abnormally often showed one to two per cent. In none of the cases thus far examined have I found more than one-tenth of one per cent. The normal fluid almost always showed a faint trace, varying from one-fiftieth to one-sixtieth of one per cent., or even less.

Tests for sugar were performed several times, and a reaction was obtained with Fehling's solution in one case. Sugar when present has no diagnostic value that I am aware of, and is present in very small quantities.

No case was examined in which the fluid was cloudy at the time it was withdrawn, that was not a case of meningitis, excepting the cloudiness due to blood, which occurred at times and which has been referred to. In these cases the blood settled to the bottom in a small drop after several hours, leaving the fluid perfectly clear and without any formation of fibrin in it. A cloudiness caused by staphylococcus infection will be referred to later. On the other hand, in only one case of meningitis was the fluid clear when withdrawn. This case will be described later, and does not invalidate the diagnostic value of the cloudiness in the least, because in any doubtful case of diagnosis, with any methods of examination, it is necessary to repeat an experiment if it is not positive the first time, and the second puncture of this case two days later showed a cloudy fluid.

In my opinion, the degree of force with which the fluid is expelled through the needle has little diagnostic value as indicating an increased amount of fluid. I have seen the fluid spurt in a fine stream in several cases in which there were no brain lesions; and, on the other hand, it has dropped from the needle in most of the cases of meningitis and in one case of hydrocephalus. In this latter case, when it was punctured a second time, the fluid spurted at first. The degree of cloudiness is to some extent proportionate to the amount of cellular exudation in the meninges. In one case of purulent meningitis caused by disease of the middle ear, the fluid was very cloudy, and a thick sediment settled quickly to the bottom of the tube. In a case of cerebro-spinal meningitis, in which the pus was confined beneath the pia, the fluid was more cloudy than in the cases of tubercular meningitis thus far examined, in which the autopsies showed that the exudation was slight and more fibrinous in character.

The microscopic examination of the sediment in the cases of meningitis thus far examined has shown a decided difference in the character of the cells which were present in the exudation. This difference appears to be an additional factor to assist in making a differential diagnosis between tubercular meningitis

and purulent meningitis. In the cases of tubercular meningitis the cells have been chiefly small round cells with a single nucleus and very little protoplasm, similar to the lymphocytes found in the blood (lymphoid cells). In addition to these, there were comparatively few polynuclear leucocytes. In purulent meningitis, the polynuclear leucocytes were very numerous, and the small round cells were comparatively few in number.

It is possible in the beginning of a tubercular meningitis to obtain a perfectly clear fluid. This was exemplified in one case in which two subsequent punctures showed the fluid to be slightly cloudy and to contain small round cells and fibrin. At the autopsy of this case only a few miliary tubercles were found at the vertex of the brain and but slight inflammatory exudation, also at the vertex.

Subsequent cloudiness of a clear fluid occurred in two cases after the fluid had remained two or three days in the test-tubes. Cultures and cover-glass preparations showed this to have been caused by bacteria, and there were no cells present. Evidently the organisms had been introduced in examining the fluid after its withdrawal from the spinal canal.

In one case the fluid showed a very faint cloudiness, so faint as to require a control with perfectly clear fluid in order to be certain of it. On the following day the sediment still remained suspended and no fibrin had formed. Cultures on blood-serum showed the presence of staphylococcus aureus, and there were no cells or fibrin in the sediment microscopically. The case was one of general infection without meningitis.

In a certain number of cases numerous white particles were present in the fluid when it was withdrawn. The exact nature of these particles could not be determined. They were neither cells nor fibrin, and showed a tendency to dissolve after several hours. Solutions of corrosive sublimate and alcohol were added to normal fluid without causing the particles to appear. The skin was moistened and scraped and the scrapings examined, also with a negative result. These particles appeared in the fluid withdrawn from cases in which there was no meningitis. They should not be confounded with the cloudiness due to cells. The latter is very finely divided and gives a general haziness to the fluid. The particles may occur in cases of meningitis, but they do not interfere with the detection of the general cloudiness.

With regard to the diagnosis of hemorrhage into the brain, or subarachnoid space, I have had no experience, but several times a number of drops of blood have followed the puncture, soon changing to blood-tinged fluid. In these cases a second puncture has evacuated clear fluid, so that for diagnostic purposes I should think that a considerable quantity of blood would be necessary. In Dr. G. W. Jacobi's two cases, I believe the blood had undergone changes and was dark-colored.

The results of lumbar puncture have thus far shown it to have no therapeutic value. Some observers have noted a temporary relief of symptoms following the operation.

Washing out the subdural space, which has recently been suggested by Dr. G. W. Jacobi seems to me to be impractical as a curative measure, except possibly in those cases of meningitis due to extension of disease from neighboring parts. In cases of cere-

bro-spinal meningitis the exudation is chiefly beneath the pia and cannot be removed by washing, and in tubercular meningitis the tubercles themselves cannot be removed. Furthermore, tubercular meningitis is almost invariably the end process of a more or less extensive general tuberculosis and for this reason can hardly be compared with those cases of tubercular peritonitis in which the process may be a local one and which have been relieved or cured (?) by laparotomy.

In the description of the cases which follows, I have omitted, for the sake of brevity, most of the clinical details because they had no bearing on the results of the investigation. The same applies to the autopsy reports.

**CASE I.** Female, aged twenty-nine months. Entered hospital December 8, 1895. Died December 19, 1895. Diagnosis, tubercular meningitis.

*Clinical History.*—Vomiting two weeks previously; irritability; fever; attacks of screaming.

*Physical Examination.*—Emaciated; anemic; irritable when roused; apathetic; head retracted; moderately elevated temperature until day of death, when it rose to 48°C. (109.8° F.).

Progressive symptoms; stupor; convulsions.

*Lumbar Puncture* performed at time of death. About four cubic centimetres of turbid fluid were withdrawn. The fluid contained about one-thirtieth of one per cent. of albumin. Microscopic examination showed the presence of numerous small mononuclear cells, a few polynuclear leucocytes and fibrin. Two cover-glass preparations were stained for tubercle bacilli, and none were found.

An autopsy was not obtained. This case occurred before the systematic examinations were begun, and a guinea-pig was not inoculated.

**CASE II.** Female, aged twenty months. Under observation for ten weeks. Diagnosis, empyema, chronic interstitial pneumonia and cerebro-spinal meningitis.

*First Puncture*, January 16, 1896. Eight cubic centimetres of perfectly clear, colorless fluid were withdrawn by aspiration. No symptoms attended or followed the operation. The fluid contained a faint trace of albumin (about one-fiftieth of one per cent.). The fluid remained clear for several days, and showed no sediment at the bottom of the test-tube.

*Second Puncture*, January 23d. About seven cubic centimetres of clear fluid were withdrawn, similar in all respects to the first. No reaction on the part of the patient.

*Third Puncture*, February 16th. This was performed on the day of the patient's death. There was some retraction of the head for a day and a half preceding the patient's death; considerable apathy and a slight elevation of temperature. A somewhat cloudy fluid was withdrawn which contained one-tenth of one per cent. of albumin. Microscopic examination of the sediment showed chiefly polynuclear leucocytes and fibrin. Cover-glass preparations stained with carbol-fuchsin, showed numerous lancet-shaped diplococci surrounded by capsules (diplococcus lanceolatus).

*Autopsy Report.*—The vessels of the pia much injected. Purulent exudation under the pia, distributed over the vertex and base of the brain and extending down on the cord. The pus was chiefly confined to the lymph-spaces by the sides of the vessels. Cultures on blood-serum showed a pure culture of the diplococcus lanceolatus.

The remaining organs showed a right-sided empyema with perforation into the lung; chronic interstitial pneumonia of right lung; no evidence of tuberculosis in any organs.

**CASE III.** Female, aged four months. Under observation for seven weeks. Diagnosis, infantile atrophy.

*Puncture*, January 17, 1896. Four cubic centimetres of perfectly clear fluid were withdrawn. No symptoms attended or followed the operation.

The patient died on January 22d.

*Autopsy Report.*—Brain normal. The remaining organs showed the changes common to infantile atrophy, namely, areas of atelectasis in the lungs; slight hyperplasia of the mesenteric lymph-glands; anemia of the organs.

**CASE IV.** Female, aged ten months. Under observation for six weeks. Diagnosis, infantile atrophy.

*Puncture*, January 23, 1896. Five cubic centimetres of clear, colorless fluid were withdrawn which contained a faint trace of albumin (about one-sixtieth of one per cent.). The fluid remained clear and without sediment at the bottom of the test-tube.

Patient discharged relieved on February 24th.

**CASE V.** Male, aged three and one-half years. Under observation for five days. Diagnosis, primary tuberculosis of the intestines; pneumonia and icterus.

*Clinical History.*—The temperature was normal when he entered the hospital on January 31st, but on the third day it rose to 40° C. (104° F.). From this time until his death, a day and a half later, there were constant tonic spasm and trismus. The pulse and respiration were but slightly accelerated. There was marked stupor.

*Puncture*, February 3, 1896. About five cubic centimetres of clear, colorless fluid were withdrawn. There was no sediment at the bottom of the test-tube after standing. Cultures made from the fluid were sterile.

The patient died on February 4th.

*Autopsy Report.*—(Dr. F. B. Mallory.) Brain normal. Primary tuberculosis of the intestines. Double pneumonia. (To be continued.)

## EXTRA-UTERINE PREGNANCY FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.<sup>1</sup>

BY ELISHA S. BOLAND, M. D., OF SOUTH BOSTON.

In considering this important subject, we want to dwell as briefly as possible on the interesting but dispensable facts of embryology, morphology and pathology.

Systematic writers have so enshrouded the subject with needless and clinically impossible refinements of classification, that the student is prone to give up in dismay.

The frequency, etiology, diagnosis and treatment will concern us most, and these considerations no general practitioner can afford to shirk.

Our treatment of the subject will have most to do with cases after rupture.

When we who graduated fifteen or twenty years ago were on the benches, our teachers, or rather lecturers, generally the gynecologists, talked some of hematocele, but the professor of obstetrics usually fought shy of extra-uterine pregnancy altogether.

Our text-books did little more than give us awful hints of these cases, when diagnosis was more than doubtful and the anomaly almost always fatal; and so we were left, blind as Ajax—but without his strength to meet the dread encounter which must come. Intra-peritoneal hematocele was dwelt on as an entirety which might be due to extra-uterine pregnancy, but some authorities hardly admitted even this. (Skene in 1883.)

When we refer to our text-books up to ten years ago, and note the contained teachings and recorded results, and compare these with later experience recorded in current literature, we are struck with the ephemeral value of our cherished volumes. We are also forcibly impressed with the fact that our thanks

<sup>1</sup> Read before the Massachusetts Medical Society, June 10, 1896, and recommended for publication by the Society.

for later progress are due to the gynecologists rather than to the obstetricians. But this is less to the discredit of the latter than at first seems manifest, for the former have literally the inside track, and have improved their opportunities.

It is trite to say that abdominal surgery has made far-reaching advances in the past decade, but some of us may fail to connect this advance with our subject. Great lessons are slowly learned by the average mind, especially when they run counter to conservative instincts and prejudices.

If anything we can report now, or elicit later on in your discussion, shall help a brother to a clearer, quicker diagnosis of this anomaly, or nerve the usually far from languid arm of a gynecologist to a prompt though desperate laparotomy, we know that oftentimes the trebly valuable life of woman, wife and mother can be saved thereby.

Does some one say, I have practised twenty years and never seen a case? We see only what we have learned to recognize, and when we really acquire some new truth we marvel at the apparently wonderful duplication of occurrences involving it. It is the unexpected that happens, and your next case may be one of extra-uterine pregnancy. Some have said the same of appendicitis, but who doubts that we formerly overlooked it? There is a curious parallelism here between the medical history of appendicitis and that of extra-uterine pregnancy. Peritonitis for years masked appendicitis, as inter-peritoneal hematocoele hid its cause, extra-uterine pregnancy, in its own clots.

Peritonitis, like charity, covers a multitude of (diagnostic) sins. One is tempted to digress here and inveigh against our honored boards of health, who refuse to let us record "heart failure" as a cause of death, but accept unquestioned our ignorance or blunders if we say peritonitis.

#### FREQUENCY.

I can find no available statistics on the number of extra-uterine pregnancies. I asked the Boston Board of Health for the number of fatal cases during the past year, and was told that there were no deaths so classified, and that it would take too much clerical work to find out. Personally I know of two fatal cases in South Boston, during the time covered by my paper. Allow me to give my own figures. For five years, from June 1, 1891, to June 1, 1896, I have cared for about 850 pregnancies, and seen them terminate in abortion, premature or term delivery. During these five years I have met in my own practice five cases of extra-uterine pregnancy. All five cases ruptured before a diagnosis was made, were operated upon, made good recoveries, and are still under observation.

It does not seem possible that one pregnancy in every 170 is ectopic, as these figures show. Five cases in 850 pregnancies are too few to be conclusive, but it must be admitted that they are very suggestive and cannot be satisfactorily explained as mere coincidences. It is very probable that such cases often pass unrecognized when fatal, or are stumbled on at autopsies, or at operations, for some other assigned disease.

#### ETIOLOGY.

If we recall the physiology of conception, it is on the theory that the spermatozoa must reach the ovary *via* the Fallopian tubes before the female primary ele-

ment is fertilized. The spermatozoa have to accomplish this journey by their inherent wriggling or sculling motion, and against the current of the ciliated epithelia lining the Fallopian tubes. The vitalizing contact having been accomplished on, near, or *in* the ovary, the ovum is believed to reach the cavity of the uterus by the motion of the ciliated epithelium above mentioned, aided by some vermicular motion of the tube itself. Now from inflammatory changes in the tube causing stricture, obstruction from tumor pressure, diminution of its lining epithelium, or any pathological cause leading to partial obliteration of its lumen or change in its lining, the now greatly enlarged ovum, lacking inherent motion, may get *side-tracked* somewhere on the surface of the ovary, in the peritoneal cavity, or as oftenest happens, in the free part of the tube. When we consider the process, the wonder is that it does not occur more frequently. We believe that it may happen even where the pelvic viscera are in a perfectly normal state. Veterinary surgeons tell us that it is common in cows under the name, when calcification has taken place, of stone calves, and I have seen it in the field rabbit (hare).

Whether arrested in the ovary, in contact with the peritoneum in its vicinity, or in the fimbria or lumen of the tube, its inherent vitality is such that attachment and growth *must* go on. The one condition of this growth and development is enormous vascularity. An encasing capsule of vessels develops around the ovum from whatever the contiguous structure, and for a while the ovum grows.

But the vascular capsule is frail and lacking the firm backing of the womb, and unless in the intermural portion of the tube, it is very prone to rupture in the early months.

Any condition that may determine an abortion in normal pregnancy acts with much greater certainty here, and few cases comparatively go to or beyond the time of placental formation. If the fetus develops in that part of the tube that traverses the uterine wall, it is not improbable that gradual dilatation of the tube may finally merge its lumen with the general cavity of the uterus, and full development and normal delivery be accomplished. In one of my cases the sac was close to the uterine wall, but no such happy termination occurred.

#### PATHOLOGY.

On rupturing, the pain is terribly intense, and a surprising hemorrhage with the development of shock occurs.

The sudden and unaccountable transition from assumed health and comparative comfort to a state of intense suffering, helplessness and fear, adds an element of terror to the prostrated patient which may amount to delirium or partial stupor.

There are abdominal distress, faintness, nausea, vomiting and rectal tenesmus. After the inter-vascular pressure is reduced by this depletion and the heart weakened in consequence, the hemorrhage may cease spontaneously, to begin again after rallying, if the latter occurs. The effused blood may clot with such firmness over one or the other tube as to give a visible projection in the corresponding quadrant of the abdomen easily palpable by the fingers, to which it gives a doughy resistance. This was manifested in one of my cases, when some time elapsed between rupture and operation.

If the hemorrhage does not recur, there is still the risk of septic infection and fatal peritonitis, or the safer though slow and exhausting process of incapsulation, and later ulceration into some neighboring viscera or through the abdominal wall.

That nature can and does rescue some of these cases is certain; but to hope that she will, even in a fair minority of the cases, is to expose our patients to a needless risk.

Obstetric authorities are agreed upon the high mortality rate of these cases of extra-uterine pregnancy after rupture, and twenty years ago Meadows spoke prophetically of the value of laparotomy for the same.

#### DIAGNOSIS.

When we are urgently called to the bedside of a woman suffering from a ruptured extra-uterine pregnancy her awe-struck face will usually tell the story more eloquently than her feeble words.

The pinched and ashen features are beaded with sweat; the nose and ears are cold; the pupils dilated, and the lips are almost as pallid as her cheeks. The hair may be dripping as if it had been submerged. The breathing is shallow and the voice feeble. By choice she lies quietly on her back in the bed, for motion gives pain. The pulse is small and hardly obtainable, and will vary from 100 to 140. As might be expected, the temperature in the period of collapse is sub-normal, 97°, but after reaction, if it recurs, the temperature may reach 99° or 100°.

No practitioner who has seen a stab or a gun-shot wound of the abdomen, with hemorrhage, or a case of perforation of the bowel in typhoid fever, can fail to be struck with the similarity of appearances presented by a woman with a ruptured extra-uterine pregnancy, except that as the hemorrhage is greater the manifestations are more striking. I am convinced that the diagnostic value of the facial expression cannot be overestimated.

Now, given a patient with the appearance I have tried to portray, and getting a history of eight or ten weeks of menstrual irregularity in a married woman, these conditions ought, at least, to put us on our guard. Better far to err on the side of assumed gravity than to lull one's self and the patient into the fatal blunder of optimistic expectancy. To fix the value of the patient's appearance, let me give a personal experience. For some time, when younger, I had dreaded to meet extra-uterine pregnancy.

On one occasion, when called to a severe case of intestinal colic (probably ptomain poisoning) with a history of missed periods, I was impressed with the belief that I had at last found what I had long dreaded to meet. I did not note that the characteristic aspect of peritoneal invasion was absent. I summoned a specialist (at my own expense) who examined her, and he, having no preconceived opinion, decided against me. Shortly afterward the patient vomited a large quantity of chocolate pie and ham, and my case of ectopic pregnancy vanished, leaving me very sore. Six months afterward, however, a real case of extra-uterine pregnancy presented itself, the patient bearing the evidence on her countenance of the awful plight she was in. So striking was the sight, that though still suffering in mind, body and estate from my former "*faux pas*," I knew that I had to deal with an interperitoneal hemorrhage, and a few hours had the

satisfaction of having my former consultant verify my diagnosis by a successful laparotomy, on this the first of my five cases of ectopic pregnancy.

To return to other diagnostic features: When the abdomen is exposed we are struck by its pallor, coldness, and if the rupture is recent, by its *lack* of distention. Later on, distention may be found, especially if septic infection of the effused blood has occurred. There will be found a sensitive area over one ovarian region, and palpation here may meet with a doughy, muffled sensation on deep pressure. Percussion over an area of varying extent will give a note ranging from intestinal resonance at the margins of the area to flatness in its centre. If the blood is still fluid it will gravitate to the lowest flank to some extent, when the patient lies on that side.

Digital examination by the vagina after rupture has not been of much help in my experience, except in excluding uterine pregnancy. During the progress of an extra-uterine pregnancy there is not usually a total suspension of the menstrual discharge, and this fact misleads the patient who may have the subjective signs of pregnancy and still believe that she is menstruating.

In ectopic gestation as in normal pregnancy the endometrium develops a decidua, but disappointed at the non-arrival of the ovum, it is shed in dark semi-fluid shreds that confuse the patient. This symptom occurred in nearly, if not all of my cases, and has some diagnostic value.

Given a patient, then, who is living in the marriage relation, and who is in the period of menstrual activity, who presents the clinical symptoms mentioned above, can a diagnosis of extra-uterine pregnancy be made before three months, unless rupture has taken place? We certainly see much the same train of symptoms in some who go the full time, and in some who abort early. Two of my cases were under observation for days before rupture, and I did not suspect ectopic pregnancy, nor was there any urgency in their condition. I doubt if an expert would have made a diagnosis with enough certainty to justify operative interference.

After rupture has taken place, however, I hold that the average practitioner ought to make a prompt and positive diagnosis, and he must have the courage of his convictions to insist upon radical measures. In no other way can he overcome the doubt and inertia with which his opinion may be met by the patient and her friends, when doubt and delay mean danger or death. After the urgent pain is relieved by morphine, as it should be, she will want to temporize.

#### TREATMENT.

When you reach a patient after rupture of an extra-uterine pregnancy, the pain and collapse call for a full dose of morphine, one-fourth to one-third of a grain with one-hundredth of a grain of atropine subcutaneously, and this may have to be repeated. The relief and apparent improvement induced thereby are surprising, and though necessary, may obstruct your efforts for your patient by making her unwilling for the radical but imperative laparotomy. Heat applied externally, and the horizontal position will help to equalize the feeble circulation. Some authorities advise ice over the abdomen to check the hemorrhage. Probably if you depend on this, the undertaker will continue its use.

The real treatment must be prompt, and can be summarized in the old surgical axiom: Cut down and tie the bleeding vessels. Remove the sac, clean out the effused blood, and if possible close the abdominal wound without drainage. Why hesitate to operate? All agree as to the terrible fatality, if left to nature, of these cases after rupture and hemorrhage. You are going to operate upon an aseptic intra-abdominal wound, where you know that no vital organ is injured; where there is no antecedent disease to militate against success, and no adhesions to threaten secondary hemorrhage or intestinal obstruction later. There is no inflammation, impaired vitality from pressure, dyscrasia or senile changes to offer trouble to the operator now, or later make life a burden for the family physician, as is apt to be the case after so many elective laparotomies. Here it really seems as if there could be no alternative. Let me emphasize. Don't let the corpse-like appearance of peritonism make you withhold from the pallid creature her one chance of life. Here, as in happier circumstances, "Faint heart ne'er won fair lady." Several times when I was giving ether in two of my cases, the pulse has almost disappeared, but rallied again under full doses of strychnia hypodermically. In another case the rigid exactness of the peritoneal toilet had to be omitted, so low was the patient, and still both cases made full recoveries. If, therefore, you are far from expert help, don't hesitate to do the best you can, using aseptic precautions. The gynecologists say that it is not a difficult operation in itself, and bi-chloride and boiling water are everywhere obtainable.

Although I have never performed a laparotomy, I should not hesitate to attempt it; if I met one of these cases so remote as to require many hours to get greater skill. Our fathers were expected to be equal to strangulated hernia or to an amputation above the knee, and with the better training of to-day no practitioner ought to shirk the relatively no greater responsibility of an emergency laparotomy for an ectopic gestation after rupture. Fortunately, however, there are few communities now where special skill cannot be obtained. Let the general practitioner make the diagnosis, and no operator will hesitate. If within reach of a hospital, by all means get the patient into it. One of my cases was carried in the horizontal position, in a hack, three miles without much suffering and no apparent injury.

Of the technique of the operation it is not my place to speak. Hardly less important is the after-care for the first two or three days succeeding the operation. Sterilized salt solution, one drachm to one pint, and strychnia subcutaneously, have given remarkably good results in the state of peritoneal collapse, in my cases, before, during and after operation.

(To be continued.)

GERMANY OFFICIALLY INVESTIGATES COLORADO CLIMATE.—Dr. Engel Reimers, chief physician to the public hospital in Hamburg, Germany, has been sent to the United States, and Colorado particularly, to investigate the influence of the climate upon tubercular patients. The doctor believes that the experiments made with lymph and other alleged cures are as naught compared with the outdoor treatment, and that the dry climate of Colorado is ideal for that purpose.—*Colorado Medical Journal*.

## Clinical Department.

### TACHYCARDIA, WITH SUDDEN RESUMPTION OF NORMAL PULSE-RATE.

BY ADDISON S. THAYER, M.D., PORTLAND, ME.

At the annual meeting of the American Neurological Association in Philadelphia, June 3d, the President, Dr. F. X. Dercum, showed how greatly our theories of nerve-function may be simplified by supposing the neuron to be endowed with motility. For example, the cessation of hysterical paralysis, he says, might merely mean that neuraxons from the cortex cease to be retracted and resume their normal connection with neurons from the spine.

Dr. Dercum is at least to be thanked for his theory. To medical teachers it may prove exceedingly useful, rivalling in value those blessed comparisons which liken the nervous system to a telephone-exchange, and the cerebral cortex to the coil of a phonograph.

The ascription of kinetic power to the neurons of the cerebrum is not only suggestive as regards the phenomena of hysteria, of hypnotism, and of sleep, but also affords a ready explanation of the performances of nerve-structures which are rarely, if ever, controlled by the will, — as illustrated by the following exploit of the pneumogastric nerve.

June 30, 1896, I was called in consultation by Dr. H. H. Allen, of Scarborough, with whose permission the case is reported, to see Mrs. A., age forty-one. For more than fifty hours the patient's pulse had ranged between 140 and 170. The carotids throbbed somewhat violently, while the pulsation of the radial was barely perceptible. There was no evidence of organic cardiac lesion. The patient complained of precordial discomfort, rather than pain, and was not in the least perturbed mentally. She had secured short intervals of sleep since the onset of the attack, which occurred in the night, while she was apparently enjoying sound rest from the effects of a dose of bromide.

For half a dozen years Mrs. A. has had similar paroxysms of tachycardia several times a year, the duration of which has averaged perhaps half a day, and none of which, except the attack now described, had lasted more than thirty-six hours. External applications, including ice, have given no relief. Numerous drugs in moderate doses and in large doses have been used repeatedly, with little effect. Sometimes the attack would cease gradually; but more often as the patient herself expressed it — adopting, I suppose, the pathology of her various medical advisers — "the nerve would connect on, I would feel and hear a snap which would almost take my breath away, and then would be all right again."

Whatever the pathology, my own fingers and watch were witnesses to the following facts. At a given time the pulse was 152. Five minutes later Mrs. A.'s husband came from her room with the announcement, "It has snapped back." I stepped hastily in, counted the pulse and found it 96.

A misplaced switch at the cerebral centres of the pneumogastric, as an anatomical conception, is complicated; but it is easy to imagine the re-making of a nerve-current that has been broken by the retraction of a neuraxon.

THE Medical Society of Virginia will meet at Rockbridge Alum Springs, September 8th to 10th.



## Reports of Societies.

### AMERICAN MEDICAL ASSOCIATION.

FORTY-SEVENTH ANNUAL MEETING, ATLANTA, GA.,  
MAY 5, 6, 7 and 8, 1896.

#### SECTION ON SURGERY AND ANATOMY.

In his opening address Dr. C. A. WHEATON of St. Paul, Minn., reviewed at some length the history of the Section from the time of its formation. Among other matters he spoke of the conservative treatment of the diseases peculiar to the weaker sex. In speaking of the medico-legal aspect of cerebro-spinal injuries the Chairman hoped that more attention would be given this matter, so that neurasthenia might cease to be the bugbear of the profession as it might be regarded at present. The address concluded with some practical remarks in regard to expert testimony.

#### SUBPHRENIC ABSCESS AND ITS RELATION TO PYOTHORAX.

DR. CARL BECK stated that of five cases of subphrenic abscess which he had observed, only twice was he able to make a correct diagnosis before operation. This condition is frequently confounded with pyothorax. The author believes that as soon as the profession at large take the same interest in subphrenic abscess that they do in appendicitis the number of cases, which in the whole present literature amounts to less than 200, would rapidly swell to an enormous proportion and much more would be known about the disease. It is sometimes impossible to distinguish an encysted pyothorax from a subphrenic abscess. The pathognomonic signs of such effusions urged by Leyden are absence of cough and expectoration, slight displacement of the heart and rapid change in the character of the note if the patient is turned. According to Dr. Beck's observations, however, pleuritic effusion, particularly pyothorax, sometimes occurs without these symptoms. The manner in which the exploratory needle may be moved about after its introduction into the abscess has also been regarded as pathognomonic, but when it is considered that in subphrenic abscess the function of the diaphragm is greatly impaired, and that furthermore the pointed exploratory needle may be fixed by the diaphragm as well as by the abscess membrane, neither the presence nor absence of free movement may be regarded as of any practical importance. In the author's opinion, aside from the history of the case — which is of the greatest importance — there are but few absolutely reliable and characteristic signs of the presence of such an abscess.

In discussing the treatment, the author stated that after every aseptic precaution had been observed the exploratory needle should be introduced over the seat of abscess. If the first trial is negative, the needle should be reintroduced several times in different places — as the pus cavity may be either of small extent or it may contain a cheesy accumulation, or finally, it may be divided into several minor cavities by adhesions. After each negative result a wire should be pushed through the needle, so that any pus which may have remained adherent to the inner surface of the needle may become detached. Occasionally it will be found useful to fill the syringe with sterile water after the operation and force the solution

through the needle into a Petri dish. If the microscope does not give sufficient information, after examining this fluid, cultures may be made in properly prepared tubes.

#### THORACOPLASTY IN AMERICA (SCHEDE'S OPERATION) AND VISCERAL PLEURECTOMY.

DR. ALEXANDER HUGH FERGUSON, of Chicago, read a paper on this subject, and reported a number of cases. Thoracoplasty, as first performed by Schede, is an heroic measure for the treatment of otherwise hopeless cases of empyema, and consists of the removal of one-half of the chest wall. The author stated that in spite of any operation some of these cases of empyema are not cured. Amyloid degeneration of the liver and tuberculosis certainly contraindicate the operation within certain limits. Dr. Ferguson first performed Schede's operation in July, 1895. Healing by first intention at the sides of the wound was secured, and the patient was able to be out in a very short space of time. In spite, however, of careful treatment for five months after the operation, a long central sinus which was constantly discharging pus remained. An operation, therefore, for the removal of the visceral pleura or pleurectomy was performed. This operation resulted in the patient's complete restoration to health. The first and only other man in America who has performed this operation is Dr. Geo. R. Fowler in October, 1893.

Visceral pleurectomy has only been performed five times altogether, including Dr. Ferguson's case. The latter's paper was well illustrated by excellent photographs and drawings.

DR. BAYARD HOLMES, of Chicago, in the discussion of Dr. Ferguson's paper, said: I have performed three operations of this kind, and two of the patients are now alive and well, and in a third case there was no improvement after the operation, and the patient subsequently died of tuberculosis. In one case drainage of the pleura had been maintained for over three months, and after cutting through the chest walls in both directions the parietal pleura was found to be half an inch in thickness and the visceral pleura presented the same appearance. After removing a considerable portion of both of these membranes the cavity was packed with gauze and the patient made an excellent recovery. Two adults on whom Dr. Holmes operated were cases of long-standing empyema; upon one of them Estländer's operation had been performed twice. After the third operation was performed final recovery resulted, although it was necessary to remove later several pieces of infected ribs which had undergone necrosis.

DR. JAS. H. DUNN, of Minneapolis, in discussing this paper said that it was his belief that the necessity for this operation was due to the failure in arriving at a proper diagnosis and to the want of proper drainage. From his experience he thought that when operations such as that proposed by Estländer were employed in the treatment of empyema the results had usually been fatal. Where these operations had been successful he believed that proper drainage alone would have secured equally good results. If a thoracoplastic operation is necessary the full removal of half of the chest wall is the most desirable. Dr. Dunn believes that the presence of old granulation tissues is what prevents a collapse of the cavity in these cases. He therefore believes



that the proper operation is the resection of the chest wall and the removal of the granulation tissue.

DR. B. MERRITT RICKETTS, of Cincinnati, read a paper on

**ENCHONDRITIS,**

especially its surgical treatment. He presented the report of a case and some interesting specimens.

The following papers were read by title:

**THE RATIONAL TREATMENT OF CARCINOMA OF THE CERVIX UTERI AS VIEWED BY THE GENERAL SURGEON,**

by DR. GEO. WILEY BROOME, St. Louis.

**POST-OPERATIVE INSANITY,**

by DR. R. HARVEY REED, of Columbus.

**EXTRA-UTERINE PREGNANCY,**

by DR. HOWARD KELLY, of Baltimore.

Dr. Kelly spoke at some length of his new method of treating this affection, and mentioned the excellent results he had obtained. He spoke of several causes for error, not only in the diagnosis, but in the treatment. Among other experiences he mentioned the fact that he had opened dermoid cysts, pelvic abscesses and small ovarian cysts, all of which he had mistaken for extra-uterine pregnancies. All of these he evacuated through the vagina. If you have a large pelvic hematocoele and will evacuate it from below, and then evacuate the sac, you will very rarely find it necessary to open the abdomen.

DR. NICHOLAS SENN, of Chicago, agreed with Dr. Kelly.

DR. KELLY, in closing the discussion, advised all to look out for the rectum, and also to be very careful to keep clear of the uterine artery and the ureters.

**EXPLORATION AND TREATMENT OF FISSURES FROM SKULL FRACTURES,**

by DR. H. H. A. BEACH, of Boston.

The modern treatment of fractures of the skull is, in a word, the impression that Lister and his teaching have made upon the surgical work of pre-antiseptic days. The results obtained before that time, through the application of principles based upon cleanliness as then understood, were not less astonishing than those of to-day considering that the work was done in ignorance of bacteria and their appalling ravages. The confidence and boldness with which the surgeon may now undertake explorations involving the gravest consequences have really been the outcome of protection afforded from septic disease by the gradual development of aseptic principles.

With all these advantages, the mortality of skull fractures involving the base remains high. It has an association with such elevation of temperature, as to point in the direction of septic infection as an explanation, and suggests a doubt of perfect asepsis in some cases.

Without question a share is inevitable from severity of injury as well as from complications that are dependent on sepsis. Crushing injuries of the head, with extensive laceration and destruction of tissue, together with abundant hemorrhage, will surely determine a proportion of more or less early and irremediably fatal results.

Of the patients who survive the immediate effects of injury, a number are subject to a comparatively

slight rise of temperature for a short time, associated with varying symptoms of concussion, and ultimately recover. The remainder improve for an uncertain period, then develop a temperature that gradually rises as the patient sinks to his death. It is possible that, of this last group, some die from chronic inflammation of brain tissues following their contusion or laceration, and the interference with their nutrition through the pressure effects of masses of clot added to the degenerative changes characteristic of those processes. Progressively high temperatures common to fatal cases, however (though every care prescribed by aseptic rules be followed), and their similarity in other respects to those treated without asepsis make it doubtful, to say the least, if sepsis has been completely eliminated from them. The reduction of this mortality is a problem that now confronts the surgeon, and, as an entering wedge toward its solution, the importance of a series of observations that will establish beyond doubt the relation of sepsis to the fatal cases cannot be overestimated. Much may be accomplished by the systematic and accurate observation of all cases of fractured skull where there is an open surface requiring dressing, or where any discharge exists, by making bacteriological cultures at intervals during life and at the autopsy; briefly, freedom from sepsis should be definitely and unmistakably proved in any fatal case by the unassailable evidence supplied by bacteriological tests, to clear it from the suspicion of putrefactive infection.

In searching for the source of infection, one is impressed with the invariable freedom with which the immediate seat of injury is now inspected, cleaned and dressed; relieving in a measure the region of direct violence from the suspicion of contamination. Of the more remote sources, the common association of bloody and serous discharges from the ear and nasal passages suggests possibilities of bacterial infection through the extension of a fracture by fissuring to the internal ear; which in addition may supply abundant material through the retained products of chronic disease. By laceration of the *membrana tympani*, direct connection is made with the outer air on one side, and on the other communication is opened through the Eustachian tube with the cavity of the naso-pharynx which Paul Ruge terms "the storehouse from which the infective elements passing through the tube into the tympanum are derived." Fissures communicating directly with the nasal cavity are of necessity open to the same infective influences. (A large percentage of those who die from skull fractures have these bloody or serous discharges, also those who survive for more than five or six days and then die. On the other hand, a good proportion of those who recover have the same history; from which it is proper to infer that such discharges are not in themselves necessarily fatal, nor the bony fissures associated with them.) Another explanation for fatal cases must be found either in the character of the injury to the brain and its vessels, or that of the fissures through which they escape. A fissure extending through loosely fractured bone would be more likely to supply an avenue for infective material to reach the skull cavity, than one that could be barely detected and closely resembled a crack in glass or porcelain. The variations between these extremes are common to *all* fractures and may explain a part at least of the differences of results in cases presenting

similar symptoms. Should fissuring extend in the direction of the internal ear, the difficulty of making that region aseptic and free from the possibility of dangerously contaminating an opening communicating with the brain, is a serious one; especially so in old cases of otorrhea.

The cavity of the skull is not second to that of the peritoneum in the importance of maintaining perfect aseptic defences. The septic area, after careful disinfection, should be approached from the wound at the vertex, by widening connecting fissures with the *rongeur* to half an inch, until the base can be easily reached and packed with gauze above and below the fissure extending along the base. The brain can be lifted with a retractor, and the auricle dissected up and displaced forward, should it become necessary. This packing of gauze limits hemorrhage without undue pressure upon the brain, and provides an excellent drainage apparatus from the vertex to the base of the skull.

As possibilities of infection cannot be estimated before the development of unfavorable symptoms, when too late to institute antiseptic measures however radical, conservative treatment should include at the first inspection of the wound, a most rigid asepsis, the exploration of fissures with the utmost precision, uncovering the whole circumference of the perforation in the skull for that purpose and providing unlimited drainage by widening the fissure into loosely connected bone that extends in the direction of the base. When nearly 50 per cent. of brain abscesses originate in suppurative ear diseases, the isolation of this region from the brain and its attachments during the repair of a fractured skull demands the serious consideration of the surgeon. It also suggests the question of a more radical clearing and asepsis of the ear cavities than can be obtained without anesthesia in cases where the temperature steadily rises, notwithstanding our precautions. The danger associated with such a plan lies in the possibility of forcing, by washing under pressure, septic material through a wide fissure into the skull cavity, and emphasizes the importance of a competent primary asepsis of the ears in all fractures connected with them.

Cases were added illustrating the practice advocated.

The Secretary, Dr. W. L. ESTES, in discussing Dr. Beach's paper, said: The questions involved in this paper, which have set forth very clearly the necessity of disinfection, the production of a septic state and the employment of proper drainage, are important ones and should not pass unnoticed. Too frequently these fractures and the necessity for their proper disinfection are overlooked by the busy practitioner, and in a number of cases which have come under my notice I have found there has been absolutely no attempt at disinfection of the nasal passages or the external auditory meatus although all the symptoms have pointed to a fracture involving the base. My custom is to thoroughly douche or spray the nasal cavities, and, when necessary, to plug them anteriorly and posteriorly with some disinfectant gauze, after which I usually plug the external auditory canal. With regard to the drainage of these conditions, it is often a very serious matter, although, if it involves the area posterior to the auditory canal it may not be so difficult. The securing of proper drainage when the area anterior to this canal is involved is the most

difficult matter, but this should not be neglected. Hemorrhage is another dangerous factor, and should receive prompt attention. The meningeal vessels are those especially likely to be involved, while the sinuses need not necessarily be injured.

#### FOUR CASES OF BRAIN INJURY.

DR. J. C. OLIVER, of Cincinnati, presented a report on four cases representing unusual injuries to the brain.

CASE I. A man, aged fifty-nine, fell a considerable distance upon his head. He presented ptosis on the left side, hemorrhage from the left nostril, motor aphasia, and pupils which did not react properly to the light. There was no paralysis of the limbs or of the face. No operation was performed. At the autopsy there was found a rupture of the middle meningeal artery on the left side and fractures of the left orbital plate and of the cribriform plate on the same side.

CASE II. A patient with Jacksonian epilepsy, the convulsions always beginning in the left leg then spreading to the left arm, the left side of the face and becoming general. After the attack he would become maniacal, in which condition he was dangerous to those about him. He was trephined over the leg centre on the right side of the brain, but no lesion was discovered other than a varicose vein in the diploe which had ulcerated its way through both tables of the skull and had caused absorption of the dura mater at one point. The course of the vein was cut out with *rongeur* forceps, and the channel in the diploe firmly plugged. For six months after the operation the patient was free from epilepsy; but after this time he began to experience pain in his left leg, and there was a gradual return of the convulsions. The patient was again operated on nine months later to break up the adhesions which were supposed to have formed, and a plate of gold foil was inserted in the deficiency in the skull. A few months subsequently he died from causes unknown, without having had any return of the convulsions.

CASE III. A machinist presenting an abscess of the upper eyelid was operated on for the evacuation of the pus, and the patient returned to his occupation. After being at work three weeks he developed an abscess over the left frontal lobe. This cerebral abscess was trephined, and three ounces of pus evacuated. The patient recovered, and is now in his usual condition of mind and body.

CASE IV. In a persistent case of acute otitis media symptoms of meningitis and possible abscess over the temporo-sphenoidal lobe having developed, he was trephined, with a negative result. The left lobe of the cerebellum was then opened, with a similar negative result. The patient died within an hour after the operation. The post-mortem showed diffuse purulent meningitis involving both the base and the convexity. There was no localized accumulation of pus. The infection in this case followed along the carotid canal.

#### CHOLELITHIASIS AND CHOLELITHOTOMY.

DR. CHARLES H. DUNN, of Minneapolis, read a paper on this subject, based upon a study of forty cases of gall-stone disease, and made a review of the literature of the subject. As a result of his experience he had been impressed with the highly over-

drawn notions of biliary colic and the mistaken view of the symptoms of cholelithiasis prevalent among the members of the profession. He believed that jaundice was given too much prominence as a symptom, and that the explanation of the presence or absence of a stone from purely mechanical reasons was a childlike pathology. He believed that jaundice was a comparatively infrequent symptom, certainly in the early part of the course of the disease, and that cases not infrequently run their whole course without icterus. The author reported a case of a young and otherwise healthy woman who died after a six weeks' attack of biliary colic with almost constant pain, tenderness and vomiting. She had had but one previous attack of short duration, a year before. A trace of bile was present in the urine, but at no time was there any icterus. At the autopsy five gall-stones were found; three in the gall-bladder and two in the common duct. The indications for cholelithiasis should be divided into relative and imperative. If the attacks are frequent, the calculi unpassed and the symptoms are not relieved by a reasonable hygienic and medical course of a few weeks' duration, so safe an operation as cholecystotomy at this stage is doubly preferable to further delay, even though no very threatening symptoms have developed; first, as the easiest escape from present suffering, and, second, as a preventive measure against the ever possible dangers of cholangitis, duct impactions, etc., which may entail a much more dangerous and trying operation upon the patient. So long as the patient is in no apparent danger a rational non-surgical management through one or several attacks cannot be condemned, and should be advised, unless circumstances offer perfect surgical conditions. When, however, after several days' duration of the attack the general health begins to fail, local tenderness develops, and the paroxysms occur at lesser intervals, with jaundice and infection threatening, the situation becomes much more serious, and the indications for interference may be termed imperative. All modern observations go to show that nine times out of ten the gall-stones occupy the gall-bladder alone, and in 95 cases out of 100 they occupy either the gall-bladder alone or it and the cystic duct.

In the vast majority of cases, therefore, the indication appears to be to open the gall-bladder, remove the stone and *débris*, and to drain the diseased organ temporarily. In the author's opinion cholecystotomy with temporary fistulæ is the operation of election in the average case of cholelithiasis, and the one to be chosen nine times out of ten.

#### A FEW RECENT CASES BEARING UPON THE QUESTION OF OPERATIVE INTERFERENCE IN ABDOMINAL AILMENTS.

DR. DONALD MACLEAN, LL.D., of Detroit, presented a paper on this subject. He desired principally to raise the question of the advisability of interference or non-interference in cases of abdominal ailments, traumatic or otherwise.

The first case mentioned was that of a very obese woman of fifty who had suffered from absolute obstruction of the bowels for ten days, and was in a very advanced state of exhaustion. Upon opening the abdomen, after a careful examination a calculus the size of an egg was found in the intestine, constituting a complete obstruction. The abdominal cavity

was closed with all possible speed, but the patient died twelve hours after the operation.

The second case was one of recurrent appendicitis, which upon the operating-table presented an appendix distended with pus; and on further investigation extensive intestinal adhesions were encountered. When these adhesions were broken up, several large rents in the intestinal walls were produced and required suturing. The patient made a complete and rapid recovery.

The third case was that of a young man, nineteen years of age, with recurrent attacks of appendicitis. At the operation the appendix was found deeply imbedded in an immense inflammatory mass surrounding the cecum.

The fourth case was that of a man who was taken suddenly ill, with all the signs of appendicitis. When first seen by the author he was suffering great distress from constant cough and the continued expectoration of extremely fetid pus. The burrowing of an appendicular abscess behind the peritoneum was suspected, and an incision was accordingly made between the sixth and seventh ribs on the right side, which tapped the depot of fetid pus. Three years have elapsed since the operation, and the patient is now in the best of health.

The fifth case was that of a man, thirty-five years old, who was thrown from his bicycle and alighted on an asphalt pavement with great force on his buttocks. While at first there were no symptoms, during the next day and evening his condition became very alarming. When seen by the author he presented all the appearances of rupture of the intestines and celiotomy was accordingly performed. Upon opening the abdomen an old ulcer was found which had produced firm adhesions between the pyloric end of the stomach and the duodenal mesentery. The jar of the fall had separated these adhesions and had produced a rupture of the stomach. The rupture was carefully stitched and all foreign matter which had escaped from the stomach into the peritoneal cavity was washed out with gallons of sterilized hot water, after which the abdominal incision was closed. Every possible precaution was taken and the patient freely stimulated. He died twenty hours after the operation. In addition to the ulcer of the stomach which was present, the left kidney was found to be very small, very imperfectly developed and situated just below the promontory of the sacrum. Whether or not this abnormality of the kidney had any effect in causing the patient's death, certain it is that complete suppression of urine existed from the time of the accident to the end of the patient's life.

(To be continued.)

#### AMERICAN SURGICAL ASSOCIATION,

DETROIT, MAY 26, 27 AND 28, 1896.

THE Annual Meeting of the American Surgical Association, opened at the Detroit College of Medicine on Tuesday, May 26, 1896, at 10 A.M.

The President of the Association, DR. LOUIS MC-LANE TIFFANY, of Baltimore, called the meeting to order, and read an address entitled

#### THE OPERATIVE TREATMENT OF TRIFACIAL NEURALGIA.

DR. S. J. MIXTER, of Boston, read a short paper

in discussion of this subject, which was then thrown open for general discussion.

DR. W. W. KEEN, of Philadelphia, in discussing this paper, said he was very much disappointed to learn that the mortality of operations for the relief of trifacial neuralgia was ten per cent. Dr. Keen stated that he had two deaths out of nine cases, one of which was due to sepsis and was avoidable. He explained the high mortality as being due in his opinion to the fact that the operation had been done by so many different operators, and he thought that special operations should be reserved for the hands of those who have had some special training. In three of the nine cases mentioned, trouble was experienced with the cornea, but in no case was the eye lost. The following is Dr. Keen's method of dealing with corneal ulcer: Sew the lids together at the margin so as to prevent the opening of the eye, take a circular piece of rubber plaster, cut a circular hole in the centre a little smaller than a watch-glass, insert a watch-glass in the hole thus made, and place this shield over the eye, the non-adhesive surface being next to the patient's eye. Although the rubber plaster does not absolutely occlude the whole space, yet the inside of the watch-glass is always moist.

DR. J. EWING MEARS, of Philadelphia, continuing the discussion on the President's address, said he would like to ask whether the President was clear in his own mind that the lesion exists in the Gasserian ganglion. If his experience with the operation upon the Gasserian ganglion demonstrates that the relief from pain is permanent, Dr. Mears considered it right to feel that the real lesion had been discovered.

DR. GEORGE RYERSON FOWLER, of Brooklyn, stated that in one of his cases there was a recurrence of pain, even although he was absolutely certain that he had removed the ganglion. The post-mortem showed the existence of a neuroma upon the stump in that portion which occupied the foramen rotundum. Dr. Fowler fully agreed with Dr. Keen as to the necessity for keeping the eye protected, and mentioned an illustrative case. Concerning the sclerotic changes in the vessels, it may be that these are at the root of the pathology of these cases. Dr. Fowler referred to a case operated upon by Dr. Morton of Philadelphia, in which Meckel's ganglion was positively removed, and yet the pain returned with all its former violence in less than two years, when ligation of the common carotid gave the man permanent relief. The author mentioned other cases in which ligation of the carotid had produced excellent results, and in one of which there was a deviation of the tongue towards the side operated upon. In this case the patient was unable to straighten the tongue. Dr. Fowler referred to one case which died during an epidemic of sepsis, and stated that he saw no reason why there should not be epidemics of sepsis as well as small-pox and scarlet fever.

DR. PARMENTER mentioned the case of an elderly woman who had facial neuralgia, and also a small aneurism of the external carotid, in whom ligation of the common carotid afforded complete recovery.

DR. H. S. WEEKS said he doubted if a surgeon was justified in resorting to intra-cranial operations before an extra-cranial had been done, in view of the large mortality.

DR. N. P. DANDRIDGE mentioned a case on which he had operated two and a half years ago, since which

time the man had been relieved from pain, but there was marked deformity of the face on account of atrophy of the muscles. There was also a small sinus leading down to dead bone.

DR. CHRISTIAN FENGER said he preferred the extra-cranial operation, as he considered it less dangerous. He called attention to the fact that the mortality from ligation of the common carotid was 18 per cent.

DR. JOSEPH RANSOHOFF said he did not think 10 per cent. a very high mortality under all circumstances, and that he considered if all the cases were included, it would be nearer 50 per cent.

DR. W. W. KEEN said he omitted to mention two methods of medical treatment, which had been of great service, one recently suggested by Dr. Dana, of New York, that of giving massive doses of strychnia, and the other was suggested by Esmarch, who has spoken of the value of purgatives.

DR. MAURICE H. RICHARDSON considered that the operations could be taken up in order, and that attacking the ganglion should be done as a last resort, especially in old people and those who are unable to stand so formidable an operation as intra-cranial neurectomy. In many cases a simple operation will give a considerable relief.

DR. FOWLER explained that the mortality of 18 per cent. in ligations of the carotids included cases of aneurisms, gunshot wounds, etc. In 52 cases where the vessels were not affected by disease nor complicated by carcinomatous tumors, the mortality was less than five per cent.

DR. P. S. CONNER said he considered the two most important points were the cause of the neuralgia and the results of operative interference. In a certain proportion of cases the exemption from pain ranges from three months to three years, while in another proportion the exemption is scarcely worth mentioning, as the pain returns immediately after the operation. In some cases the loss of blood during the operation and the shock from the operation have caused periods of freedom from pain. The propriety of the operation has been established, as a man would rather take forty-nine chances out of fifty to get relief.

DR. T. A. MCGRAW was of the opinion that sufficient investigation had not been made of the possibility of the neuralgic conditions being due as well to motor as to sensory nerves, and stated that he was not at all sure that a division of some of the motor nerves might not be a great benefit.

DR. RICHARDSON stated that this operation had been performed and had resulted in considerable facial deformity, but no relief of the neuralgia.

DR. S. J. MIXTER mentioned two cases in which merely a reopening of the old intra-cranial wound had afforded some relief.

DR. TIFFANY closed the discussion, and stated that forty-five operators had participated in the hundred cases reported, of which number twenty-four had each operated upon one case only. He also mentioned that there is diminished sensation in these cases, and lessened lachrymation. He considered the curving of the tongue due to atrophy of the muscles, but did not understand why the perception of heat and cold should be interfered with.

As to tying the carotids Dr. Tiffany stated that Dr. Park, of Buffalo, had successfully done this in two cases.

## THE SURGICAL TREATMENT OF TUBERCULOSIS OF THE SOFT PARTS.

## (A) TUBERCULOSIS OF THE MALE GENITO-URINARY APPARATUS,

by DR. NICHOLAS SENN, of Chicago.

Dr. Senn not being present, his paper was passed.

## (B) TUBERCULOSIS OF THE FEMALE GENITAL ORGANS (INCLUDING TUBERCULOSIS OF THE KIDNEY),

by DR. ALBERT VANDER VEER, Albany.

Dr. Vander Veer treated his topic in the following order: clinical history, etiology, symptoms and diagnosis, treatment. He stated that this subject had been neglected until recent years, and that the modern ideas and progress depended upon careful histological and bacteriological examinations. Tuberculosis of the female pelvic viscera is not limited to any age, the extreme limits being ten weeks and eighty-three years. External genital lesions may be confounded with tuberculosis. Heredity is important as suggesting tubercular possibilities. Tuberculosis is extremely rare in the external genitals, but by no means infrequent in the uterus. Tuberculosis of the uterus can be demonstrated by microscopical examination of the discharges and by curetting. Gonorrheal infection is often grafted upon tuberculosis. Sometimes infection takes place through the fingers or the instrument or the semen. Tuberculosis originates in the tubes and infects the uterus and cervix. The uterus can be infected from without or within, and the infection is aided by a lacerated cervix, pelvic peritonitis, trauma, etc. The symptoms are local irritation, a pea-sized wart near the vaginal outlet, a discharge from the uterus, etc. The differentiation between the ulcers of syphilis and epithelioma depends on age, history, local appearances, etc. Tuberculosis of the cervix may be mistaken for cancer. Many vaginal cases are infected from the tubes, and tubercular peritonitis may infect the vagina and the tubes. The author mentions several cases illustrative of the points mentioned.

With regard to tuberculosis of the kidney, there may be two forms, (1) miliary tuberculosis and (2) caseous or true tuberculosis. The author gave the details of one or two cases, and referred at some length to Kelly's nephro-ureterectomy.

## (C) TUBERCULAR PERITONITIS,

by DR. ROBERT ABBE, of New York.

In reviewing this interesting subject, Dr. Abbe thought it gave a fairer understanding of the multi-form appearances of the disease if we viewed it from the standpoint of the bacillus, rather than as others have done from the gross appearance, which has led to the division into the ascitic, the dry and the caseating form. A sudden tubercular irruption into the peritoneal cavity may be as acute in symptoms and duration as acute peritonitis from other causes. A slower outbreak may result in ascitic distention in three or four weeks, and a less virulent bacillus action may occupy months in inducing ascites and wasting. In other cases, possibly due to the route of invasion, (penetration through lymphatics communicating mucous and peritoneal serous coats or by follicular ulcers — allowing tuberculous milk to be the medium of infection) a dry or adhesive form follows in which hectic and rapid wasting result. Again, the bacillus produces an outpouring of thick lymph and flocculent

serum, which rapidly becomes purulent, producing unsymmetrical cakes of thickened omentum, matted coils and encapsulated purulent collections. The bacillus products rapidly caseate, and ulcering fistulae may result. All phases of the disease may be regarded as representing the life history of the bacillus and its products. Tubercular peritonitis may be, and in the early stages often is, the only site of tubercle deposit in the patient; hence, if overcome here, a practical cure often follows. Even when other phases of infection, (pleural, intestinal, bronchial) are seen, an operative cure of the peritonitis has often been followed by general recovery. The mode of entrance of the bacillus is directly through the intestinal wall or through ulcerating appendicitis or tubal or ovarian tuberculosis, or through the blood. The claims of a few recent authors to having cured tubercular peritonitis by medical treatment were reviewed and credited.

The unquestioned cure of true tuberculous peritonitis by laparotomy was proved by two classes of cases, those who have long survived operation, and those who, having come to autopsy long afterwards, have been found free from tubercles that studded the peritoneum at the time of operation. Experimental proof in animals corroborates also operation by simple laparotomy and evacuation of the ascites; closing the dry abdomen is credited with a large number of cures. Irrigation with warm salt solution is advocated by preference. Camphor-naphthol application, as used by Rendu, is advised for bad cases.

Dr. Abbe reviewed many interesting and illustrative cases in speaking of direct medication. The many theories advanced to account for the surprising cures were carefully considered; and it was said in conclusion, that "the theory that is sustained by most facts is that based on the life history of the bacillus and the capacity of the animal economy, not only to suppress the activity of the organism by encapsulating it, but to remove it by absorption. The proper opportunity for conquests is not afforded in the presence of ascitic fluid, which acts as a veritable culture bouillon and by its fluidity aids dissemination. When, however, the peritoneum has been aroused by congestion, which follows evacuation, and a reactionary inflammation is set up, engendering cell hyperplasia, the intruder is walled in and retrograde degeneration sets in."

## (D) INTRA-THORACIC TUBERCULOSIS,

by DR. GEO. RYERSON FOWLER, of Brooklyn.

Dr. Fowler went into the historical part of the disease at great length, and devoted considerable attention to the surgical treatment of pleuritis and empyema. Of all the organs in the human body the lungs are the most frequently the seat of these affections. Inasmuch as there is no lung affection that cannot be complicated by tuberculosis, it follows that pleural affections are most frequently tuberculous in character. Few patients who have suffered from pleurisy escape tuberculosis, and this fact increases the importance of the surgery of pleuritic affections in their relation to tuberculosis. The author gave a brief discussion of the effects of the presence of the pleuritic effusion upon the progress of tubercular disease of the pulmonary structure. The view formerly held that the activity of the circulation in the lung tissue constituted a trustworthy means of protection against the occurrence of tubercular infection of the respiratory organs was combated, and reference was made to the observations

of Lænnec, who in the early history stated that stasis was incompatible with the progress of pulmonary tubercular affections; and Bier's observations supported by those of Miller in the treatment of tubercular joint disease by means of a constricting bandage were held to confirm the views of Lænnec in this particular. Note was taken of the fact that in any pleuritic affection, even when due without doubt to tubercular infection, the effusion is found to be serum, the suggestion follows that this effusion possesses some resisting influence over the development of the tubercle bacillus, while it undoubtedly forms a favorable culture medium for other organisms. The application and technique of exploratory puncture or thoracentesis, incision and drainage and Kœnig's operation, the resection of a portion of rib, were gone into quite extensively. This was followed by a consideration of the operation of thoracoplasty and its indication. Schede's operation for extensive resection of the chest wall, including with the bony resection removal of the attached soft parts, namely, the intercostal muscles and thickened pleural membrane, was described. It was recommended that the edges of the incision should be closed closely about the drainage-tube and the dressing should be applied in such a manner that the tube passes through these. The drainage-tube is then attached to a tube sufficiently long to lay over the side of the bed and touch the surface of a sublimate solution. When the patient can sit up the tube is fastened to a bottle at the waist, as suggested by Bulau of Hamburg. By this method and drainage, the patient is saved from the discomfort produced by soiled dressings. The question of the complications occurring in connection with thoracoplastic operations upon the chest wall, namely, pulmonary thrombosis, cerebral embolism and the resulting paralysis was alluded to.

The consensus of opinion at the present day seems to discountenance thoracotomy in tubercular patients, preference being given to repeated puncturing, or at the most the method of permanent siphonage.

The question of the direct treatment of tubercular cavities was entered into quite extensively, and it was stated that some difficulty must necessarily be experienced in the selection of proper cases. In cases in which the disease had come to a standstill any interference would be unjustifiable for the reason that it is these cases that undergo cure by natural processes. In addition to limiting operations on tubercular cases to those that are circumscribed, the operation may be applied to certain cases of a doubtful nature, which form at the expense of both pleura and lung, namely, pulmonary abscesses secondary to tubercular caries of the ribs. Three examples of this were quoted.

The operation of resection of the lung was discussed at some length, and attention was called to the fact that the pulmonary structure differs from all other structures in the body in its susceptibility to infection and its anatomical peculiarities.

The experiments of Gluck of Berlin and Hans Schmidt upon the lower animals for resection of the lung were gone into in detail, and also those of Virondi, who produced localized tuberculosis in animals.

DR. DE FOREST WILLARD, of Philadelphia, read a paper on

#### TUBERCULOSIS OF THE SUPERFICIAL GLANDS.

Dr. Willard first detailed the method of tubercular infection of the lymph nodes. The route of entrance

is usually by very slight abrasions or injury. Slight wounds are more liable to admit bacilli, as they arouse local resistance to a less degree than more severe injuries. The face and neck are especially common routes of entrance. The lymph glands act as filtration stations, and often prove effective in overpowering the invading foe. They are likely to be successful in proportion to their amount of resistive force. An individual's resistive force may be lessened by hereditary impairment of cells, or by the temporary conditions of the tissues.

Local karyokinetic action may be successful, or if partially successful, caseation and absorption may occur with less resistive power, or if staphylococcus infection results suppuration follows.

When once the glands have become infected, they are a perpetual menace to the general system, and should be removed. Suppuration will sometimes effectually destroy all the invading bacilli; yet this is a slow and dangerous process, subjecting the individual to constant risks.

Infected glands should be removed, if possible, during the stage of duration.

The removal of tubercular glands from the neck is frequently a most serious operation, provided connective infiltration is present, and especially if the chain of glands has dipped deep beneath the cervical vessels and nerves or has extended below the clavicle. These deep glands can only be safely removed by following the line of cleavage between the gland and the protection wall, which has been partially thrown about it, each gland being cautiously shelled out.

The jugular veins, the branches of the carotid and the pneumogastric and phrenic nerves should be carefully avoided. When a vein is injured immediate pressure, with subsequent ligation or lateral suturing, should be performed. If the phrenic or pneumogastric are injured, they should be at once sutured with fine silk.

Great care should be exercised to prevent the discharge of pus and caseating material upon the fresh wound; if such accident occurs, the area should be thoroughly cleansed and disinfected.

Temporary drainage is advisable when infection has occurred from such discharge; but in healthy operations with clean enucleation primary union without drainage can be secured.

In infection in the axilla, the glands should be enucleated with the same care that is employed in the removal of carcinomatous nodules. The same rule holds good in regard to glands situated in other portions of the arm.

In the groin many difficulties will be encountered, especially if the indurated glands extend deep about the femoral or saphenous veins.

Secondary operations are advisable if necessary.

In cases that absolutely refuse operation, local and constitutional measures must be employed, including tuberculin and sero-therapy.

The author has more confidence in the local effects of iodine upon tubercular granulations than in iodoform. He has also had beneficial results from stimulation of cell growth by a mixture of aristol with nuclein or proto-nuclein applied locally.

His conclusions are that tubercular infiltration glands should not be allowed to remain and contaminate the general system.

(To be continued.)



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### NEUROGLIA STAINING.

THE history of staining, especially as it relates to the nervous system, has been one of extreme interest. Development has followed development in natural sequence, until now, within a year, we have coming almost simultaneously from Germany and America still another method which has already thrown much light on that most elusive of all the tissues, the neuroglia of the central nervous system.

As one looks back over the histological work of the last forty years, it is significant to note how much painstaking research has been devoted to the peculiar problems which the nervous system offers, and how often, even up to within a few months, false conclusions have been published, which were false simply because of the inadequacy of existing methods. This fact has been especially noteworthy, that the very value of the methods employed were often their most serious disadvantage. To stain a section too thoroughly has often been as detrimental to its proper understanding as to stain it too partially. We now clearly recognize that a bit of cerebral cortex, for example, may deceive a most skilled observer in its complexity of detail from the very perfection of its staining. Such, indeed, has so often been the case, that even now in speaking of ultimate structural principles, with all the light of modern methods, we are still right in maintaining a sceptical attitude, at least as regards the possibility of fundamental changes in our now generally accepted view of nerve organization.

It goes without saying that to staining methods we owe our present conception of nerve structure. It was quite impossible to arrive at anything more than a crude idea of organization from the rough macroscopic methods in use during the early part of this century. The earliest staining is associated with the name of Gerlach (1858) who first used carmine with success, a staining agent which with certain vicissitudes has come down to our time. By means of carmine, and later by allied substances, an excellent dif-

fuse stain of neuraxon processes, ganglion cells and neuroglia was obtained; but it was diffuse, and herein lay both its advantage and its disadvantage—its advantage in demonstrating much of the normal structure and its pathological modifications, its disadvantage in staining so many elements that details were lost or obscured to such a degree as to make their correct recognition impossible. False notions of nerve structure and of the essential features of neuroglia were of necessity inaugurated, and took strong hold upon the scientific mind. Nor did the, in other respects, invaluable myeline sheath stain of Weigert (1884) throw light on many of the problems of finer structure, notably upon that of the neuroglia, for which it was in no way intended. In the light of recent research we must also attach a minor significance to Golgi's work, so far as it concerns itself with the topography and intimate histology of neuroglia. Here, again, the exceedingly great value of a method in one direction, has led undoubtedly to false ideas in others, and probably nowhere more than in the conception it has given us of the neuroglia.

All of the methods alluded to and many others which might be mentioned, have enlarged our knowledge to a great degree, and have also unfortunately fixed our preconceived prejudices not infrequently in quite wrong directions. It was reserved for Golgi and those working with his methods to demonstrate the principle of contiguity as a fundamental one of nerve organization, but this same method in equally skilful hands was utterly unable to show, what we must now regard as an equally fundamental law of the organization of adult neuroglia, namely, that it consists of cellular elements and fibres *unassociated* by continuity of structure with the cells, in other words, a true intercellular substance. The diffuseness of previous methods of the carmine type had prevented, except by conjecture, the microscopic picture of the actual conditions, chiefly from the fact that it stained too much, neuraxons and protoplasm of cells as well as neuroglia, hence the inevitable confusion. Weigert's hematoxylin methods were directed to a different object, the staining of myeline, and hence could not be expected to aid this particular problem. It is, however, worth much consideration that the various silver methods of Golgi have proved equally futile; and yet, as Weigert has recently pointed out, this is not in the least to be wondered at when one reflects that they fulfil none of the requirements of an adequate neuroglia stain; they are too uncertain, too crude, too selective regarding elements of the same histological character in a section, namely, neuroglia cells and fibres, and not selective enough regarding elements of different character. In other words they do not stain all the neuroglia in a given section, and do stain structures other than neuroglia. A reading of Weigert's recent monograph on the "neuroglia" can leave no doubt that the Golgi methods are absolutely incapable of dealing with the real problems at issue.

What was needed and scientifically required was a



method of staining which would color all the neuroglia in a given section and absolutely nothing but the neuroglia. Until this end was reached our knowledge of neuroglia remained what it had always previously been, a knowledge made up of often shrewd, but usually incorrect suppositions. It is a matter of just self-congratulation that the preliminary solution of this most difficult histological question should have come from Boston as well as from one of the most prolific neuro-histological laboratories of Europe, that of Professor Weigert, in Frankfort-am-Main. Working independently of each other, Mallory and Weigert published at essentially the same time a selective method of staining the neuroglia of the human brain and spinal cord which fulfilled the scientific requirements and thereby opened a new field of research for the histologist and pathologist of the nervous system, whose limits it is at present difficult to see. Both investigators have shown that the neuroglia has close analogy with ordinary connective tissue, although still of epiblastic origin, in the fact that it consists of cells and more important, differentiated fibres of different chemical reaction. Weigert's exhaustive preliminary monograph is but another example of the absolutely thorough and painstaking work of its author, and no doubt will take its place among those books which mark a distinct step in medical progress.

The great importance of the new revelation is hardly to be overestimated. It places at once in an intelligible light that large class of processes, more or less justly termed the scleroses, and will no doubt, as investigation advances, give us a still greater clew to the underlying principle of normal structure, and so ultimately of the morbid processes to which such a structure is continually being exposed.

#### TREATMENT OF WHOOPING-COUGH BY BROMOFORM.

FERREIRA,<sup>1</sup> writes with favor of the treatment of whooping-cough by bromoform. He administers it in potion, adding enough alcohol to dissolve. The dose is three to six drops in children under one year, six to fifteen drops in older children. In cases of great violence the dose is increased; the remedy is readily tolerated, and of feeble toxicity.

In the great majority of cases, the efficacy of bromoform is prompt. At the end of from three to six days, the paroxysms of cough undergo a sensible attenuation, and their intensity is appreciably lessened. In some cases which Ferreira reports, the remedy "produced the extinction of the disease in the course of ten days." In fact, he declares that the general effect of bromoform is to cut short the disease in less than a fortnight.

He believes that bromoform acts both as a germicide and a depressant of the reflex excitability of the nervous system, the spasmodic phenomena of the disease being reduced and disappearing under its use.

<sup>1</sup> Bulletin Général de Thérapie, June 30, 1896.

The bacterial origin of this eminently contagious disease is now generally admitted.

Possibly (as Stepp suggests), this drug is decomposed in the organism, being transformed into free bromine, which is exhaled by the respiratory passages, and thus acts directly on the pathogenic micro-germs of the pertussis.

Bromoform has now been employed many years in whooping-cough, being proposed by Stepp in 1887 and tried on seventy patients with remarkable (*étonnantes*) results. "The children all got better in five or six days, and the cough was all gone at the end of a fortnight."

Lowenthal, in 1880, presented a new series of cases confirmative of the good effects of bromoform in pertussis. He administered it in one hundred cases aged from eight weeks to seven years, with such success that he claims a certain specific action of bromoform in whooping-cough, "so striking is the promptitude of the therapeutic effects and the efficacy of this medicine against the paroxysms of pertussis even when they are violent and complex."

Later still, Shossel and Paul Guttman in Germany tried this medicament in hospital and private practice, and found it signally efficacious. In England, Burton Fanning, after having had recourse to bromoform in one hundred cases of whooping-cough, has made an interesting communication to the *British Medical Association*, in which he affirms that "bromoform mitigates the intensity and lessens the number of the paroxysms of pertussis and causes them to completely disappear when the cases are not of great severity. It arrests the vomitings, the epistaxis and other hemorrhages, and ameliorates the bronchial symptoms, rendering expectoration easier; it is an antiseptic and at the same time a sedative of the nervous system."

Bromoform is a clear, limpid liquid of a special odor resembling a little that of chloroform, of an agreeable savor, very soluble in alcohol, and but little soluble in water. It is rather more volatile than chloroform.

"Bromoform," says Dr. Louis Fischer,<sup>2</sup> "should be given in a small teaspoonful of water. Owing to its weight it sinks to the bottom of the spoon, and great care must therefore be taken to see that the child swallows the bromoform, and that it does not remain in the spoon. There is no difficulty in giving bromoform to children, as it has a pleasant taste."

#### MEDICAL NOTES.

**YELLOW FEVER IN CUBA.**—The yellow fever in Cuba continues to increase, there being a larger number of cases and deaths reported from nearly every consular or sanitary district. The small-pox mortality is still high, especially in Santiago de Cuba.

**CHOLERA.**—The latest reports from Alexandria show a rapid increase in the number of cases of cholera. The disease is at present so prevalent as to be

<sup>2</sup> Braithwaite's Retrospect, Part C, II, p. 257.

beyond the control of the limited medical force. For a while the cases were confined to a few quarters, but the opposition to all sanitary or quarantine control has at last resulted in a general epidemic. The disease is reported from nearly 90 different places, and during the week ending July 1st, there were 1,200 deaths, while in the following six days there were 1,700. There are already recorded 8,000 fatal cases since the outbreak began.

**RESIGNATION OF DR. KIERNAN.**—Dr. James G. Kiernan, of Chicago, has resigned the editorship of the *Medical Standard*.

**DR. BRUSH APPOINTED PROFESSOR OF PSYCHIATRY.**—Dr. Edward N. Brush, Superintendent of the Sheppard Asylum of Baltimore, has been elected Professor of Psychiatry in the Woman's Medical College of Baltimore.

**AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.**—The ninth annual meeting of the American Association of Obstetricians and Gynecologists will be held at Richmond, Va., September 22, 23 and 24, 1896.

**MISSISSIPPI VALLEY MEDICAL ASSOCIATION.**—The date of the meeting of the Mississippi Valley Medical Association has been changed to September 15th to 18th, in order to permit the members and their families to take the opportunity to make a tour through the Yellowstone Park, as arranged by members of the Association in St. Paul and Minneapolis, to leave on the evening of September 18th.

#### BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—During the week ending at noon, August 5, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 74, scarlet fever 14, measles 65, typhoid fever 16.

**THE MAYOR'S ADVISORY BOARD.**—The Advisory Board on Public Institutions, appointed by Mayor Quincy, met for the first time on August 3d and arranged for its work under the Mayor. Dr. Charles P. Putnam was made chairman of the Board, which is made up of twenty persons, representing the following organizations: Associated Charities, Massachusetts Prison Association, Municipal League, Twentieth Century Club, Society of St. Vincent de Paul, Suffolk District Medical Society, Children's Aid Society, Massachusetts Society for the Prevention of Cruelty to Children, Citizens' Association, Medico-Psychological Society, Boston Provident Association, Committee of Council, United Hebrew Benevolent Association, Merchants' Municipal Committee, Young Ladies' Aid Society. There are five physicians, two lawyers, one clergyman and seven business men on the committee. The following division of the board was made at the organizing meeting:

On Penal Institutions—Rev. Samuel J. Barrows, Chairman; William Lowell Putnam, Salome Merritt,

M.D., Elizabeth M. McCarthy and Edward Reynolds, M.D.

On Children's Institutions—Thomas F. Ring, Chairman; George P. Gardner, Charles W. Birtwell, Mrs. J. Harvey Young, Augustus Thorndike, M.D.

On Pauper Institutions—Charles P. Putnam, M.D., Chairman; Miss Annette P. Rogers, Mrs. Davis R. Dewey, John P. Leahy and John F. Moors.

On Institutions for the Insane—Henry C. Baldwin, M.D., Chairman; Mrs. Martha W. Folsom, John D. Williams, John J. Kennery and Louis Hecht, Sr.

#### NEW YORK.

**THE FLOATING DISINFECTING PLANT.**—On July 29th Dr. Doty, Health Officer of the Port, had the new floating disinfecting plant of the quarantine department brought to the foot of West 44th Street and thrown open for the inspection of the medical profession and state and city officials. It is a small steamboat, now known as the James N. Wadsworth, which was formerly the quarantine boat "Ripple." It is furnished with baths for immigrants, apparatus for fumigating clothing and pumps for forcing disinfectants into ships.

**A MEDICAL CENSUS.**—The police have been instructed, by a recent order from headquarters, to take a careful census of all persons practising as physicians in the city, giving names in full and any specialties advertised. The lists will be submitted to the Board of Health and the officials of the Medical Society of the County of New York for inspection, in order that steps may be taken for the prosecution of any one practising without proper legal qualifications.

**DEATH OF DR. MAXIMILIAN WEIL.**—Dr. Maximilian Weil, of New York, died in the hospital at Mount Vernon, Westchester County, on July 27th. He had not been in good health for some time, and among the symptoms from which he suffered was marked mental depression. On July 25th, while at the home of his wife's mother in New Rochelle, he took a considerable quantity of carbolic acid and afterwards cut his throat. His ostensible reason for this suicidal act was that he had given his wife an overdose of morphia, but notwithstanding the fact that Mrs. Weil rapidly recovered from the effects of the morphia given her, he continued to exhibit violent signs of insanity. He declared his determination to die, and although he was subjected to physical constraint and carefully watched in the hospital, he succeeded more than once in tearing open the wound in his throat. Dr. Weil was graduated from Bellevue Hospital Medical College in 1889, and had made a considerable reputation in the department of bacteriology.

**DEATH OF DR. SAMUEL SWIFT.**—Dr. Samuel Swift, of Yonkers, on the Hudson, died in the Flower Hospital, New York, on July 29th, of an attack of apoplexy, with which he was seized while in a city theatre on July 25th. He was born in Brooklyn, N. Y., and was graduated from the College of Physicians

and Surgeons, New York. Early in his professional life he was taken into partnership by the late Dr. J. Foster Jenkins, of Yonkers, for many years the most eminent physician in Westchester County, and on the death of the latter, succeeded to his large and lucrative practice. Dr. Swift married a daughter of the late Professor Davies, of West Point, and in addition to his professional success attained a prominent position in the community where he lived. He was for some time Mayor of the city of Yonkers, being first elected to that office in 1882. From the time of his taking up his residence in Yonkers he was a prominent member of the Medical Society of the County of Westchester, which was organized early in 1897.

**MORTALITY.**—During the past two weeks there has been a gratifying decline in the mortality of the city. In the week ending July 25th, there were reported 858 deaths, a decrease of 266 from the preceding week. In the week ending August 1st the number of deaths was 883. Of the total number of deaths in the fortnight (1724), 870, or slightly more than one-half, were in children under five years of age. During the week ending August 1st the number of deaths from measles declined to 7; those from scarlet fever to 3; and those from diphtheria to 24. Whooping-cough continues to be unusually prevalent, and the number of deaths from this cause amounted to 15.

### Miscellany.

#### THE REPORT OF THE NEW YORK SURGICAL SOCIETY UPON ERYSIPELAS TOXINES.

THE committee, consisting of Drs. L. A. Stimson, A. G. Gerster, and B. F. Curtis, appointed by the New York Surgical Society to investigate the use of erysipelas toxines in cases of malignant disease, have made the following report upon the treatment.<sup>1</sup>

"Both before and since our appointment as a committee, we have been able to observe, individually and together, a considerable number of cases treated by this means, and in no case have we found any amelioration which held out a prospect of ultimate cure. We have on the contrary, observed in some cases that the rate of growth of the disease was much more rapid during the treatment. The treatment also imposes a very severe tax upon the strength of the patient, and apparently hastens the cachexia in most cases.

"We believe that in the instances of apparent cure or marked improvement the correctness of the diagnosis is open to doubt.

"We therefore submit:

"(1) That the danger to the patient from this treatment is great.

"(2) Moreover, that the alleged successes are so few and doubtful in character that the most that can be fairly alleged for the treatment by toxines is that it may offer a very slight chance of amelioration.

"(3) That valuable time has often been lost in operable cases by postponing operation for the sake of giving the method of treatment a trial.

<sup>1</sup> *Annals of Surgery*, July, 1896.

"(4) Finally, and most important, that if the method is to be resorted to at all, it should be confined to the absolutely inoperable cases."

#### CHICAGO'S METHOD OF DETERMINING ITS DEATH-RATE.

THE municipal death rate of Chicago is to be lessened. It was larger than desirable and as the number of deaths reported is a fact, having figures not to be gainsaid, the simplest method to reduce the rate was to add to the population a convenient lump number of citizens with which to dilute the figures.

The *Journal of the American Medical Association* says of this:—

"After figuring its death-rate for some eighteen months on a basis of 1,600,000 Chicago has resolved, through its City Council, to cut down the rate by adding 150,000 to its population. The following is the text of a preamble and resolution to that effect adopted by that body at its meeting on the 22d inst.:

*Whereas*, A recent enumeration by the United States postal authorities shows that there are 202,511 habitations in the city of Chicago, exclusive of stores, office buildings, factories and other places not used for dwelling purposes; and

*Whereas*, The United States census authorities in 1890 found the average number of persons in each such habitation was 8.6; and

*Whereas*, It is desirable for certain municipal purposes that the population of the city be fixed and declared; therefore, it is hereby

*Resolved*, That the minimum population of the city of Chicago for the current fiscal year 1896 be held to be that determined by the above factors—that is to say, in round numbers, 1,750,000.

Probably this is as good a way as any to guess at what should be a matter of exact determination by a careful enumeration; but our whole system of census-taking, from the national inventory down to the census taken by the police force, is exasperatingly defective. No vital statistics based on such figures can possess any value or command any credence. Chicago, for example, on this officially resolved figure of population, will have a death-rate of about 13.5 per thousand for the current year. The only thing which is absolutely certain concerning the city's mortality is that there have been a few less deaths so far this year than there were during the corresponding period of last year."

#### MR. LECKY ON WOMEN AS ANTIVIVISECTIONISTS.

MR. LECKY, in his most interesting book on "Democracy and Liberty," devotes a chapter to Woman. He gives her a high and honorable position as helping the general progress of reform. The prominent part played by women in the cause of antivivisectionists is thus dealt with in the chapter in the second volume:

"Women, and especially unmarried women, are, on the whole, more impulsive and emotional than men; more easily induced to gratify an undisciplined or misplaced compassion, to the neglect of the larger and more permanent interests of society; more apt to dwell upon the proximate than the more distant results; more subject to fanaticisms, which often acquire almost the intensity of

monomania. We have had a melancholy example of this in the attitude assumed of late years by a large class of educated Englishwomen on the subject of vivisection. That a practice which may be and has been gravely abused is properly subject to legislative control will probably be very generally admitted. But it would be difficult to conceive an act of greater folly or wickedness than to prohibit absolutely the most efficient of all methods of tracing the origin, course, and filiation of disease, the only safe way of testing the efficacy of possible preventives and remedies which may either prove fatal or be of inestimable benefit to mankind. What tyrant could inflict a greater curse upon his kind than deliberately to shut it out from the best chance of preventing, alleviating, or curing masses of human suffering, the magnitude and poignancy of which it is impossible for imagination adequately to conceive? What folly could be greater than to do this in a country where experiments on animals are so guarded and limited by law that they undoubtedly inflict far less suffering in the space of a year than field sports in the space of a day?

"The spectacle of great numbers of most humane and excellent women taking up such a cause with a passion that would undoubtedly lead them, if they possessed political power, to subordinate to it all the great interests of party or national welfare, has probably done as much as any other single thing to shake the confidence of cool observers in the political capacities of women. It is true that they are not alone in their crusade; but it is only necessary to look down any annual list of subscriptions in such societies to perceive how enormously the female element preponderates. In the administration of justice; in measures relating to distress and poverty that may be mainly due to improvidence or vice; in all questions of peace and war—such a spirit would prove most dangerous. There have been ages in which insensibility to suffering was the prevailing vice of public opinion. In our own there is, perhaps, more to be feared from wild gusts of unreasoning, uncalculating, hysterical emotion. '*Les races*,' as Buffon said, '*se féminisent*.' A due sense of the proportion of things; an adequate subordination of impulse to reason; an habitual regard to the ultimate and distant consequences of political measures; a sound, sober, and unexaggerated judgment, are elements which already are lamentably wanting in political life, and female influence would certainly not tend to increase them."

### Correspondence.

#### THE DOCTOR, FREE SILVER, AND FREE EVERYTHING.

—, KENNEBEC Co., ME., July 30, 1896.

MR. EDITOR:—Under ordinary circumstances I believe it is true that doctors had better avoid politics, and medical journals political discussions. But the present are not ordinary circumstances; the questions which doctors, in common with their fellow-citizens of this republic, are to vote upon at the polls next November, are not questions of politics or political parties. They are questions of right and wrong, of honor and dishonor, of prosperity or misery. In such questions doctors have, as citizens and as individuals, as keen an interest as any class or mass in the whole community. It is their duty to try to find out where the right is, where their own true interests and those of others dependent directly or indirectly upon them lie. My intrusion upon your pages, therefore, with some remarks upon some of the problems thrust upon us by the Chicago and the last St. Louis Conventions requires no apology.

Doctors, in common with the great majority of their fellow-citizens, are really wage-earners. Suppose, leaving all questions of honesty aside, this country votes to put its dollar stamp at the ratio of 16 ounces of silver to one ounce of gold upon all silver brought to its mints, and to make

those dollars a legal tender for debts, what will happen to the doctor?

When he is a money shark and bloated capitalist, with a life insurance or a savings-bank deposit, his savings and his capital will be cut in two. These, of course, he will willingly lose because the voter has decided that it is for the public good. He turns for consolation to the income from his practice and finds that although for 100 visits he has charged, even if he has not collected, as many dollars as before, these dollars will only procure from other workers about half as much of what they furnish and he needs.

Then the doctor sits down and reflects: This is all doubtless for the public good, for the voters have voted it, but I have been a little slow in catching on and profiting by the wise precept and example set me. Fifty cents is a dollar; eighteen inches is a yard; a pint is a quart; two pecks make a bushel. The inverse of this excellent method is what I require to place me among the other benefactors of the people and to give me a share in the curious kind of prosperity which I see around me. I will call one visit two visits; a three-dollar visit, a six-dollar visit, and hope I may collect; the amputation of one leg two legs; every case of labor I will call twins. If the doctors in as big a country as mine say this, it will go, and that which was not will be. Of course, when my fellow-citizens make up their minds to say that twenty-five cents is a dollar it will be less easy for me to say that the amputation of one leg is the amputation of four legs, as most people only have two; but the habit of calling new things by old names will have been formed and who knows what may not pass under its impulse!

Yours respectfully,

MEDICUS.

#### THE MEDICAL PROFESSION IN RUSSIA.

Boston, July 31, 1896.

MR. EDITOR: While glancing over the pages of a Russian journal the other day, I chanced to run across a bit of Russian statistics, that may be of interest to your readers, especially in view of the approaching International Medical Congress at Moscow.

According to Professor Sicorsky, the number of suicides among the medical men of Russia exceeds that in any other class of people (a fact said to be observed all over Europe). The greatest number occurs between the ages of twenty-five and thirty-five—the first years on the slippery road to success, when the greatest energy is spent in establishing one's self, in face of broken hopes and intense disappointments. Deaths from infectious diseases, which spread with remarkable rapidity in Russia, are quite frequent, and nowhere in the world (with the possible exception of China) do the sanitary authorities encounter such obdurate superstition and impenetrable ignorance, completely thwarting their efforts. The irregular life of the younger practitioner; at times hard labor, day and night, for a miserable pittance; the excessive nervous strain—all these bring on apathy, melancholy, *tadium vita*, hopelessness; to this last the Russian, who is a born fatalist, is particularly liable to fall a prey.

A yearly income of 2,000 roubles (\$1,000) is rather rare, the average being somewhere near 1,200 roubles. For a population of almost 120 millions there are hardly 16,000 practitioners; and still the grand total of the yearly income of 6,106 of them amounted to a trifle over six million roubles, that is, hardly one thousand *per caput*!

Taking into consideration that it takes a Russian eight years of preliminary education (in a so-called gymnasium) before he is admitted to the study of medicine, and five years of hard, conscientious labor before he obtains his license to practise it, sometimes on the confines of civilization among a semi-barbarous population, the above facts are a sad commentary on a sadder condition of things in Holy Russia.

Very truly yours,

A. ROVINSKY, M.D.

## METEOROLOGICAL RECORD

For the week ending July 25th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r.		Rainfall in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S..19	30.34	66	72	59	55	57	56	N.E.	S.	4	15	C.	O.	.01
M..20	30.10	70	78	64	61	69	65	S.W.	S.	10	23	O.	O.	.15
T..21	29.84	80	87	72	72	83	83	S.W.	S. W.	10	18	R.	O.	.10
W..22	29.94	77	83	71	71	69	70	W.	S.	6	16	O.	O.	.10
T..23	29.79	74	82	66	68	46	60	S.W.	N.W.	16	24	F.	O.	.09
F..24	29.96	66	73	58	59	61	75	W.	S.	6	24	C.	R.	.56
S..25	29.88	66	75	57	58	59	86	N.	S.W.	15	16	O.	C.	.91
☞	29.99		79	64			71							

\* O., cloudy; C., clear; F., fair; O., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 25, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	856	443	28.92	9.72	21.60	.84	3.12	
Chicago	1,678,967	486	274	42.20	8.00	33.80	2.00	3.00	
Philadelphia	1,164,000	507	248	27.00	9.60	20.40	.80	5.70	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	491,206	304	189	40.32	7.68	35.52	.32	3.20	
Baltimore	496,315	218	113	37.26	9.20	32.20	1.38	32.20	
Cincinnati	386,000	93	29	12.96	14.04	5.40	1.08	5.40	
Cleveland	314,537	126	70	20.54	3.95	17.38	3.16	—	
Washington	275,500	142	68	28.70	13.30	23.80	2.10	2.10	
Pittsburg	238,617	106	57	39.48	8.46	30.08	4.70	—	
Milwaukee	265,000	—	—	—	—	—	—	—	
Nashville	87,754	39	14	25.60	17.92	15.36	7.68	—	
Charleston	65,165	37	20	16.20	10.80	8.10	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	98,687	40	25	32.50	2.50	25.00	—	—	
Fall River	88,020	78	52	51.20	5.12	50.00	—	1.28	
Lowell	84,359	55	32	34.58	3.61	27.30	—	—	
Cambridge	81,519	67	35	37.75	12.25	40.25	—	3.50	
Lynn	62,305	17	12	17.64	11.76	17.64	—	—	
New Bedford	55,254	43	36	53.59	2.33	53.59	—	—	
Springfield	51,534	37	15	40.50	2.70	37.80	—	—	
Lawrence	52,153	—	—	—	—	—	—	—	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	31	20	45.22	6.46	45.22	—	—	
Brockton	33,157	25	16	40.00	8.00	40.00	—	—	
Haverhill	30,185	19	9	26.30	5.26	26.30	—	—	
Malden	29,706	14	9	64.53	—	57.12	—	—	
Chelsea	31,295	24	14	37.44	12.48	29.12	—	4.16	
Fitchburg	26,394	15	13	46.66	6.66	46.66	—	—	
Newton	27,422	6	6	33.33	16.66	33.33	—	—	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	27	11	48.10	14.80	33.33	3.70	—	
Waltham	20,877	7	3	28.56	—	14.28	—	—	
Quincy	20,712	6	5	50.00	—	50.00	—	—	
Pittsfield	20,447	7	5	42.84	28.56	28.56	—	—	
Everett	18,578	5	1	40.00	—	40.00	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,554	7	4	42.84	14.28	42.84	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 3,548: under five years of age 1,812; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,090, diarrheal diseases 877, consumption 315, acute lung diseases 152, diphtheria and croup 90, typhoid fever 41, whooping-cough 36, measles 19, cerebro-spinal meningitis 10, scarlet fever 9, erysipelas 5.

From whooping-cough New York and Chicago 10 each, Philadelphia, Boston and Lowell 3 each, Charleston 2, Baltimore, Cincinnati, Pittsburg, Nashville and Waltham 1 each. From measles New York 6, Chicago and Pittsburg 4 each, Philadelphia, Boston, Worcester, Chelsea and Pittsfield 1 each. From cerebro-spinal meningitis New York 5, Worcester 2, Washington,

Providence and Charleston 1 each. From scarlet fever New York 5, Chicago, Providence, Springfield and Malden 1 each. From erysipelas New York and Chicago 2 each, Lowell 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending July 18th, the death-rate was 21.4. Deaths reported, 4,452; acute diseases of the respiratory organs (London) 165, diarrhea 755, measles 134, whooping-cough 124, diphtheria 72, scarlet fever 47, fever 20.

The death-rates ranged from 31.9 in Salford to 13.2 in Halifax: Birmingham 23.2, Bradford 14.6, Croydon 14.1, Hull 14.2, Leeds 21.4, Leicester 23.6, Liverpool 25.8, London 22.3, Manchester 24.8, Newcastle-on-Tyne 15.2, Nottingham 19.7, Portsmouth 17.5.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 25, 1896, TO JULY 31, 1896.

Leave of absence for one month, to take effect on or about August 5, 1896, is granted MAJOR HENRY MCLEDDERY, surgeon, Fort Robinson, Neb.

CAPTAIN GEORGE E. BUSHNELL, assistant surgeon, is relieved from duty at Fort Hamilton, N. Y., to take effect upon the expiration of his present leave of absence and ordered to Fort Assiniboine, Mont., for duty at that station, relieving CAPTAIN PETER R. EGAN, assistant surgeon.

CAPTAIN EGAN, upon being thus relieved, is ordered to Fort Hamilton, N. Y., for duty.

Leave of absence for three months, on surgeon's certificate of disability, is granted FIRST-LIEUT. ISAAC P. WARE, assistant surgeon, Madison Barracks, New York.

## RECENT DEATHS.

SIR WILLIAM GROVE, D.C.L., LL.D., P.C., F.R.S., died in London, August 2d, aged eighty-five years. He was a noted contributor to the Transactions of the Royal Society upon questions in physical science, especially in the department of electricity. In 1839 he devised the constant battery which bears his name and which is one of the most convenient and powerful of the two-fluid batteries, though rather expensive. His essay on "The Correlation of Physical Forces" was published in 1843.

LUIGI VILLA, M.D., professor at the Milan Institute of Serotherapy, died last month from accidental inoculation with a culture of glanders with which he was experimenting.

## BOOKS AND PAMPHLETS RECEIVED.

Ophthalmia Neonatorum. By William Cheatham, M.D., A.B., Louisville, Ky. Reprint. 1896.

Bellevue Hospital Medical College of the City of New York, Circular of Information, 1896-97.

Philadelphia Hospital Reports, Volume III, 1896. Edited by George E. De Schweinitz, A.M., M.D., Member of the Ophthalmic Staff.

Report for the year 1895-96, presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

Blind Leaders of the Blind; The Romance of a Blind Lawyer. By James R. Cocke, M.D., author of "Hypnotism," etc. Boston: Lee & Shepard, Publishers. 1896.

A Treatise on Appendicitis. By John B. Deaver, M.D., Surgeon to the German Hospital, Philadelphia. Containing 32 full page and other illustrations. Philadelphia: P. Blakiston, Son & Co. 1896.

Hand-Atlas der Anatomie des Menschen in 750 Theilen. Farbigen Abbildungen mit Text, mit Unterstützung von Wilhelm His, Professor der Anatomie an der Universität Leipzig, bearbeitet von Werner Spalteholz a. o. Professor an der Universität Leipzig und Custos der Anatomischen Sammlungen. Erster Band, 2 Abtheilung. Leipzig: Verlag von S. Huzel. 1896.

System of Surgery. Edited by Frederic S. Dennis, M.D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College; Visiting Surgeon to the Bellevue and St. Vincent Hospitals; Consulting Surgeon to the Harlem Hospital and the Montefiore Home, New York; Ex-President of the American Surgical Association, etc. Assisted by John S. Billings, M.D., LL.D. Edin. and Harv., D.C.L. Oxon., Deputy Surgeon-General, U. S. A. Vol. IV. Tumors, Hernia, Surgery of the Alimentary Canal, Appendicitis, Surgery of the Liver and Biliary Passages, of the Uterus, of the Ovaries and Tubes, Gynecological Surgery, Symphysectomy, Surgery of the Thyroid, Surgical Peculiarities of the Negro, Surgery of the Female Breast, Use of the Röntgen Rays in Surgery. Profusely illustrated. New York and Philadelphia: Lea Brothers & Co. 1896.

## Original Articles.

ANTITOXIN IN THE TREATMENT OF DIPHTHERIA,<sup>1</sup>

BY JOHN H. MCCOLLOM, M.D.,

*Resident Physician, South Department, Boston City Hospital.*

It is the generally conceived opinion that physicians are exceptionally conservative in accepting any new remedy for the treatment of any special disease, and it is well that it should be so; for only by careful investigation of the results of any special mode of treatment can we hope to arrive at the truth. Statistics of the result of any method of treatment of a special disease, to be of value, must be based on a large number of cases and must continue for a very considerable period of time. It is also important that the cases should be observed until absolute recovery takes place. Antitoxin has now been in use something over three years, and the consensus of opinion is that it is a remedy of great value in the treatment of diphtheria. It has not, however, proved of advantage in far advanced septic cases of this disease, neither has it been shown to be of any value in the later symptoms characterized by failure of the heart's action and a general degeneration of the nerves. While it is not claimed that antitoxin will cure every case of diphtheria, it is claimed, and an analysis of the following statistics proves, that the serum of horses rendered immune to the toxine of diphtheria is one of the most valuable agents in the treatment of diphtheria. In the Boston City Hospital in 1891 there were 237 cases of diphtheria treated, with 105 deaths. In 1892-3 there were 387 cases treated, with 185 deaths. In 1893-4 there were 438 cases treated, with 203 deaths. In 1894-5, when antitoxin was used only in a comparatively small proportion of cases, there were 698 cases treated, with 266 deaths, making a total of 1,760 cases with 759 deaths, with a percentage of 43, which was about the average death-rate of diphtheria in hospital cases both in this country and in Europe. In private practice the death-rate as a rule is not quite so high as in hospital cases, simply from the fact that the severe cases only are sent to the hospital. In Boston, from 1878 to 1894, the average death-rate in the city was 30.7. The lowest death-rate was 27.18 and the highest 35.7. As this comprises 24,813 cases, the average fatality of the disease can be readily seen. In the South Department of the Boston City Hospital, from the first of September, 1895, to the first of May, 1896, when every case was treated with antitoxin, there were 1,359 cases of diphtheria treated, with 170 deaths, giving a percentage of 12.50. In the year 1895 throughout the whole city there were 4,059 cases reported to the Board of Health, with 588 deaths and a percentage of 14.48. These cases reported to the Board of Health include many mild cases and therefore cannot give a proper idea of the death-rate of this disease. Some of these cases were without doubt treated with antitoxin, but how many it is impossible to state. The cases in the South Department of the Boston City Hospital, on the other hand, were nearly all of them severe cases and in many instances the membrane covered the tonsils, the uvula and nearly the whole of the roof of the mouth, with extensive

swelling of the cervical glands. As a rule patients are not sent to a hospital unless they are seriously ill, and for this reason statistics based on hospital cases give a much better idea of the benefit of any prescribed method of treatment than can be obtained from cases in private practice. It is claimed, and with truth, that in the first year of life diphtheria is an extremely fatal disease, the majority of patients succumbing to it.

An analysis of the cases at the hospital shows that in eight months there were 17 cases admitted under one year of age with three deaths, giving a percentage of 17.6. The number of patients from one to two years old admitted was 74 with 20 deaths, giving a percentage of 27; from two to three years of age there were 186 patients admitted with 37 deaths, giving a percentage of 27; from three to five years of age 329 patients were admitted with 55 deaths, a percentage of 16.7; from five to ten years there were 410 patients admitted with 39 deaths, giving a percentage of 9.5; from ten to twenty years 187 patients with nine deaths, giving a percentage of 4.8; and from twenty years and upwards 206 patients with seven deaths, a percentage of 3.4. All of these cases were treated with antitoxin, and it would seem that these statistics should convince any one of the beneficial effects of this agent. If we take the highest death-rates occurring in any of these ages, namely, that from one to two years, and also from two to three years, children of these ages being particularly susceptible to the disease, and in whom diphtheria plays the greatest havoc, we find that the death-rate is 27 as compared with 43 before antitoxin was used—a marked diminution.

In the epochs of life from five to ten years, from ten to twenty years, and from twenty years upwards, there is an extremely low death-rate, being respectively 9.5, 4.8 and 3.4. There would seem to be only one explanation of this low death-rate. In all of these cases antitoxin was administered within a very short time after the admission of the patients. Bacteriological examinations were made in every instance, but it was not deemed advisable to wait for the result of the cultures before administering the serum. In order to obtain the best results from the use of the anti-diphtheritic serum, it is important to administer the agent early in the disease. A delay of twenty-four hours after the appearance of the membrane frequently imperils the lives of the patients. In a case of well-marked clinical diphtheria the time necessary for the growth of the organism in the culture tube is lost, but it is very important that cultures should be made in each and every case of diphtheria in order that statistics may be based on a scientific foundation. The failure to obtain a positive result has occurred so seldom as not to be a factor of the slightest value, as this failure has been due to some error in technique. The importance of the early administration of antitoxin is shown by an examination of the statistics of the hospital. Of the 1,359 cases admitted 53 died within twenty-four hours of admission, and of these 53 quite a large number died within two or three hours. If we eliminate these 53 cases, we have 1,306 cases and 117 deaths, a percentage of 8.9. If we eliminate the 74 deaths that occurred within forty-eight hours of admission, we have a percentage of 7.4.

Table of the number of cases of diphtheria, treated at the Boston City Hospital, with the deaths, by ages, from September 1, 1895, to May 1, 1896:

<sup>1</sup> Read before the Massachusetts Medical Society, June 9, 1896, and recommended for publication by the Society.

Ages.	Cases.	Deaths.
1 year . . . . .	17	3
1-2 years . . . . .	74	20
2-3 " . . . . .	136	37
3-5 " . . . . .	329	55
5-10 " . . . . .	410	39
10-20 " . . . . .	187	9
20 years and upwards . . . . .	206	7

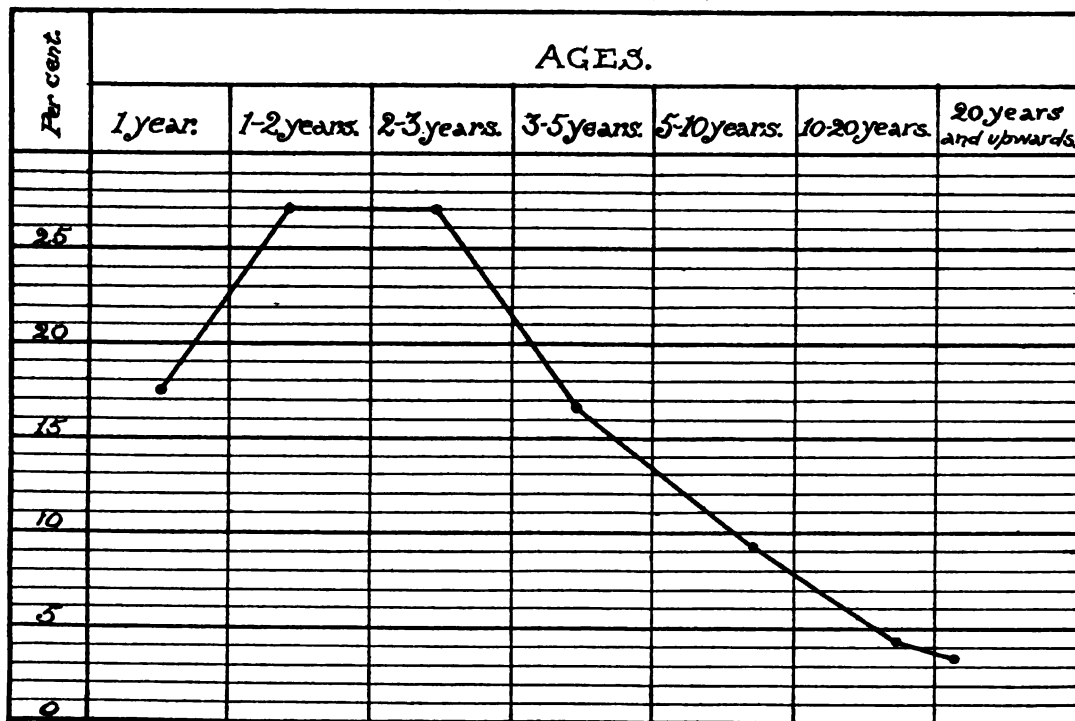
Cases in which antitoxin was used: 1,359 with 170 deaths, per cent. 12.50.

Cases from February, 1891, to February, 1894, in which antitoxin was not used: 1,062 with 493 deaths, per cent. 46.

It is manifestly evident that moribund cases should not be used as an argument against the administration of antitoxin, and therefore in studying the use of this remedy these cases should be omitted. If a death-

The antitoxin that has been used is that prepared by Prof. H. C. Ernst. From 5 to 10 c. c., varying according to the strength of the preparation and the age of the patient, have been administered. If at the end of twenty-four hours there was not a marked improvement in the general condition of the patient and in the appearance of the membrane, a second dose was administered. If there was no amelioration of the symptoms twenty-four to thirty-two hours after the second dose was administered, a third dose was given, and in certain instances a fourth dose. The appearance of the membrane in favorable cases caused by the action of the antitoxin is very characteristic. The membrane commences to be detached at the edges, is

CHART OF THE PERCENTAGE OF DEATHS FROM DIPHTHERIA, BY AGES, AT THE SOUTH DEPARTMENT OF THE BOSTON CITY HOSPITAL, FROM SEPTEMBER 1, 1895, TO MAY 1, 1896.



rate of 8.9 in hospital cases when antitoxin was employed is compared with a death-rate of 27.06, the lowest death-rate in the city at large from 1878 to 1894, a period of 17 years, it would seem that there could be no other explanation than that this result was due to antitoxin. The effect of antitoxin, not only in the operative cases but in those in which an operation was impending, is very marked. Many cases have been observed at the hospital in which an operation before the days of antitoxin would have been necessary, but after eighteen to twenty-four hours the laryngeal stenosis was relieved, and large pieces of membrane were coughed up. In the operative cases the relief in many instances has been very marked. In the Boston City Hospital for the year ending January 31, 1895, there were 89 intubations and 74 deaths, giving a percentage of 83. In the South Department of the Boston City Hospital for eight months there were 136 intubations and 63 deaths, giving a percentage of 46, a diminution of 37, nearly one-half. It seems reasonable to suppose that this diminution is due to the use of antitoxin.

undermined and begins to roll up. This appearance is so characteristic that when it has occurred a second dose has not been given. In no instance has the membrane ever re-formed to any considerable extent. In septic cases the septic odor in the majority of instances has been less apparent after the administration of antitoxin. The stronger the antitoxin is the better; because it is necessary to inject a less quantity, as can be readily understood. An injection of 20 c. c. into the cellular tissue causes quite a perceptible tumor, and is a source of annoyance to the patient, therefore a preparation in which the requisite dose is from 5 to 10 c. c. is better than one in which the dose is 20 c. c. The method of estimating the dose of antitoxin by normal units is perhaps the better one. An antitoxin unit is an amount of serum required to protect a guinea-pig weighing 500 grammes from the minimum fatal dose of the toxine of diphtheria. The number of immunity units per cubic centimetre would give the strength of the serum; for example, one-one-hundredth of a cubic centimetre would protect a guinea-pig weighing 500 grammes, and for a person weighing



130 pounds, or about 50,000 grammes, one cubic centimetre would be required for procuring immunity. For the cure of the disease, however, fifteen or twenty times as large a dose is required, namely, 1,500 to 2,000 units.

In no instance has any serious effect followed the use of antitoxin at the hospital. In a few instances abscesses have appeared at the point of injection. Cultures made from the contents of these abscesses showed a pure growth of streptococci, and as abscesses are not infrequently concomitants of diphtheria, it is reasonable to suppose that the injection of antitoxin was only an exciting cause of a predisposing condition of the system. As illustrating this point, two sisters with severe attacks of diphtheria were injected at the same time with the same specimen of antitoxin. One had a large cervical abscess from which a pure culture of streptococci was taken, the other had a small abscess at the point of inoculation which also gave a pure growth of streptococci. The injection of antitoxin had certainly nothing to do with the cervical abscess, and it is at least doubtful if the injection was the direct and immediate cause of the second abscess. It is a significant fact that pure cultures of streptococci have been obtained from all the cervical abscesses at the hospital occurring in the course of diphtheria.

Severe joint pains have been noticed in five instances. These attacks have generally lasted from twenty-four to forty-eight hours, and have been a source of annoyance to the patients, but in no instance have they been an element of danger.

Urticaria has occurred in quite a number of cases, and although this has been a cause of discomfort to the patient, it has never been a grave symptom. Dermatitis, resembling the eruption of a severe attack of scarlet fever, in which the diagnosis for the first twenty-four hours was impossible, has been noticed in a few instances. The moderate rise in the temperature, the absence of vomiting and the subsequent history of the case confirmed the diagnosis of antitoxin rash. An eruption resembling measles has been noticed a few times. From the appearance of this eruption it would be impossible to make a differential diagnosis, but the absence of constitutional symptoms has been an aid in deciding upon the nature of the eruption.

In the mixed cases of scarlet fever and diphtheria, antitoxin has had a beneficial effect upon the diphtheritic membrane, but of course has had no effect on the attack of scarlet fever. In addition to the use of antitoxin, alcoholic stimulation has been very freely used; digitalis, strychnia and atropia have been used in suitable cases. Milk has been the principal article of diet, and has been given in as large quantities as the patient could be induced to take. In certain cases where the patients absolutely refused to take food and stimulants, nasal feeding has been tried, and in some instances this seemed to be the turning point, and the patient's life was apparently saved by this procedure. It is not sufficient to simply give antitoxin and do nothing else for the relief of the patient. In no disease are food and stimulants more imperatively demanded than in diphtheria, and an attempt has been made to give food and stimulants in any way in which they could be absorbed. A word may be said regarding nasal feeding. It is less annoyance to the patient, it causes less strain on the nervous system in some instances to give food by the nasal tube than by the mouth. The constant endeavor to make a patient take food by the

mouth is a much greater injury to him than the passage of a small rubber catheter through the nose into the stomach. The beneficial effects of this method of feeding have been illustrated in so many instances at the hospital, that I may be pardoned for alluding to it in somewhat strong terms. The less you annoy a patient ill with diphtheria the better for him. There is no doubt in my mind that many a diphtheria patient has been harried to death by over-zealous attempts to induce him to take nourishment.

Irrigation with a hot saline solution, and in some cases a solution of corrosive sublimate, one part to ten thousand, has been the application that has been used for the nose and throat, and the relief experienced by patients from this has been very marked. The less one interferes with the membrane the better for the patient. The irrigation removes all particles of membrane that are easily detached, and does not leave an abraded surface to serve as a focus for the extension of the membrane. The forcible detachment of the membrane by forceps cannot be too strongly deprecated. The use of caustics is of no advantage.

The experiments of Roux and Yersin show conclusively that diphtheritic membrane is less likely to extend on intact mucous membrane than on abraded surfaces, and therefore when the mucous membrane is in any way injured an opportunity is given for the extension of the disease.

Albuminuria has not been increased to any considerable extent by the use of antitoxin. An analysis of 83 cases at the hospital, in which the urine was examined before and after antitoxin was administered, showed that in 38 cases albumin was absent; that in 30 cases there was the same amount of albumin before and after antitoxin was given; that in 11 cases albumin was diminished after the injection, and that in four cases albumin was increased. Of these four cases, in two the amount of the increase was from nothing to the slightest possible trace, and in two the amount was increased from a trace to a large trace. In no instance have renal complications given rise to serious symptoms. Albuminuria is such a frequent complication in diphtheria that any statistics, to be of value regarding the action of antitoxin on this condition, must embrace a great number of cases, and the examination of the urine must be made before and after the administration of the agent. Observers who have claimed that antitoxin causes albuminuria in diphtheria have in many instances failed to test the urine before antitoxin was used, and many of these observers lose sight of the fact that albuminuria is one of the most constant symptoms in severe cases of diphtheria.

No cases of anuria have been observed at the hospital.

Paralyses have been observed in a comparatively small number of cases, the percentage being somewhat less than was noted before the days of antitoxin. When the cases have been received early in the history of the attack, before the growth of the organism was sufficient to generate a great amount of toxine, paralysis has not as a rule occurred. If, on the other hand, the case was received late in the course of the disease and the membrane was extensive, paralysis more or less marked has occurred in the majority of cases. Cases of sudden death so common in the convalescence of diphtheria have not occurred, but there

have been a few cases in which after apparent convalescence there would be an attack of vomiting and the patient would rapidly lose strength and gradually sink and die in from twenty-four to seventy-two hours from the commencement of the attack. Broncho-pneumonia has been one of the most frequent causes of death, and no one claims that antitoxin has any remedial power in this condition. If all the cases of death from broncho-pneumonia were eliminated, the death-rate from diphtheria pure and simple, when antitoxin is used, would be much lower than that which has been previously given.

In the laryngeal cases intubation has been the operation generally selected, as this operation has in every instance relieved the stenosis. The advantages of intubation are, first, a minimum amount of shock, and second, there are no cut surfaces to afford soil for the growth of not only the diphtheria bacilli but of other bacteria, for no matter how carefully you may carry out aseptic precautions it is impossible to keep a tracheotomy wound aseptic as can be done in other surgical operations. There can be no doubt that the fatal issue in cases of tracheotomy is due in most instances to an infection either through the wound or through the orifice of the tube itself. In the few cases of tracheotomy at the hospital, death was caused by this very infection. Another advantage of the intubation tube is the fact that the air that enters the lungs passes through the natural channels and therefore is less likely to irritate these organs. One argument that has been used against intubation is that the patient is unable to take the requisite amount of food; but this is obviated by the use of nasal feeding, which has been a very important factor in reducing the death-rate. That antitoxin has also been a very important factor no one can reasonably doubt who has observed intubation cases before antitoxin was used and since its adoption.

The site of the injection has been in some instances the outer aspect of the middle third of the thigh, the lumbar region and the upper third of the thorax near the posterior axillary line. After a careful consideration of these various positions, it seems to me that the last situation is the best, for the reason that any irritation and swelling in this locality causes less annoyance to the patient than in either of the other localities. One very important advantage is also that in this place the nervous distribution is comparatively limited, and therefore the amount of pain is diminished to a minimum. The technique of the operation is as follows: First, the parts are rendered aseptic by washing with corrosive sublimate; second, the syringe and needle are carefully sterilized by boiling. The antitoxin is strained into the barrel of the syringe through sterile gauze. A fold of the skin is taken up by the thumb and forefinger, and the needle plunged deeply into the cellular tissue. The injection is then made slowly and carefully with only a limited amount of force. After the needle is removed the opening in the skin is sealed with gauze and collodion. If the injection is properly given there should be no tumor and therefore no necessity of rubbing the parts in order to cause the disappearance of the tumor as is recommended by certain observers. Williams's syringe, which consists of a glass barrel and a glass piston with asbestos packing, is the instrument that has been used. Koch's syringe, which consists of a glass barrel with a detachable rubber bulb, is a very good

instrument for this purpose. Lürer manufactures a very good syringe. One advantage of Lürer's syringe is that there is no packing to become worn, as the piston is carefully ground to fit the barrel. The only objection to this syringe is its high cost. As a matter of fact it makes very little difference what kind of a syringe is used so long as each and every part can be thoroughly and absolutely sterilized by heat without injury. A small needle should always be used, for with a minute puncture the danger of infection is diminished.

The preparation of antitoxin, and its use in the treatment of diphtheria, are the results of careful and laborious work of bacteriologists, and whatever advantage has been gained in the treatment of diphtheria is due to the science of bacteriology. It has been claimed that the use of antitoxin is unscientific, but any one who has carefully read the reports of Roux, Yersin, Aronson and many others cannot fail to be struck with the eminently scientific nature of their work. As the preparation of antitoxin requires great scientific knowledge and an unlimited amount of time and patience, it is evident that in order to be a success, from a commercial point of view, the price must be so high as to place it out of the reach of the poorer classes, and therefore it is incumbent on State and City Boards of Health to make arrangements whereby the serum can be distributed gratuitously or sold at a nominal price. As has been before stated, all the antitoxin used at the hospital has been prepared by Dr. Ernst, and there can be no doubt that the satisfactory results obtained have been due to the excellence of this preparation and the careful manner in which it has been prepared.

In this paper a short and imperfect account of the work in the diphtheria wards of the hospital has been outlined, and certainly a diminution of the death-rate from 46 per cent. when antitoxin was not used, to one of 12.50, when it was used, can only be explained by the remedial power of this agent. If many cases of death occurring in persons ill of diphtheria, but in whom the cause of death was other than diphtheria, had been eliminated, the death-rate would have been much lower; but as it has been the object of this paper to show the true value of antitoxin in the treatment of diphtheria, it has been deemed advisable to err against antitoxin rather than for it.

#### SOME EXPERIMENTAL WORK ON LUMBAR PUNCTURE OF THE SUBARACHNOID SPACE.<sup>1</sup>

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(Concluded from No. 6, p. 136.)

CASE VI. Male, aged six months. Seen only once on February 1st. Diagnosis, tubercular meningitis.

*Clinical History.*—Vomiting; feverishness and retraction of the head, which began about the middle of January. There was some abatement of the symptoms after several days. On January 27th, the vomiting recommenced, together with retraction of the head; apathy and twitching of the left arm and leg. The temperature on February 1st was 38.4° C. (100.7° F.).

*Puncture,* February 1, 1896. About two cubic centi-

<sup>1</sup> From the Sears' Pathological Laboratory of the Harvard Medical School. This paper was read before the Clinical Section of the Suffolk District Medical Society, April 15, 1896, and also at the Annual Meeting of the American Pediatric Society in Montreal, May 27, 1896.

metres of cloudy fluid were withdrawn. No reaction on the part of the patient attended the operation. Microscopic examination showed the cloudiness to be chiefly due to small mononuclear cells. Some fibrin was formed later. Cover-glass preparations were stained for tubercle bacilli and two doubtful ones were found. Cultures on blood-serum were sterile. A guinea-pig was inoculated with the fluid but he was unfortunately killed by mistake and not examined.

*Later History.*— Upon inquiry, it was learned that the child died three weeks later. During the last three days he had opisthotonos and convulsions.

**CASE VII.** Male, aged seven months. Under observation for three weeks. Diagnosis, porencephalus.

*Clinical History.* The patient entered the hospital on February 5, 1896. There was a history of frequent convulsions which began when he was about three months old. While in the hospital the convulsions occurred not less than twenty times a day. Oftentimes he had several in an hour. Marked rigidity of the extremities and opisthotonos were constant symptoms. The temperature was normal until ten days before his death. Physical examinations of the various organs, made several times, were invariably negative. Seven or eight days before his death he developed an acute inflammation of both middle ears, which subsided in two or three days without any discharge.

*First Puncture,* February 5, 1896. Twelve cubic centimetres of clear, colorless fluid were withdrawn. The fluid escaped at first with a spurt and then flowed by drops. The specific gravity was 1.006 and there was no albumin by the heat and nitric-acid tests. A test for sugar with Fehling's solution was negative. No sediment collected in the test-tube after standing.

*Second Puncture,* February 21st. A clear fluid was withdrawn, similar in all respects to the first, except that it contained a faint trace of albumin (about one-sixtieth of one per cent.). This time the fluid escaped by drops.

*Third Puncture,* February 27th. The fluid was perfectly clear and dropped slowly from the needle. It remained clear and contained a faint trace of albumin.

After standing for ten days, the fluid from the second puncture became cloudy. Microscopic examination showed that the cloudiness was due to bacteria. There were no cells or fibrin present.

The patient died on February 28th.

*Autopsy Report.*— The brain showed a rudimentary development but no evidences of inflammation. The other organs were normal, with the exception of areas of atelectasis in the lungs. Cultures from the organs showed the colon bacillus present in the liver, spleen and kidneys and a mixture of organisms in the lungs.

**CASE VIII.** Male, aged five years. Under observation for three weeks. Diagnosis, tubercular meningitis; disseminated tuberculosis of the lungs, liver, spleen and kidneys; chronic tuberculosis of the bronchial glands.

*Clinical History.*— There was an indefinite history of slight convulsions, without loss of consciousness, which occurred just before he entered the hospital; together with headache for a week and vomiting. The patient came to my out-patient clinic February 20, 1896, and was recommended for admission into the hospital. While undergoing examination he became quite rigid. This was immediately followed by spasmodic movements of the right leg and arm and athetoid movements of the fingers of the right hand. There was no loss of consciousness. The child seemed frightened and clung to his mother's neck. After his admission to the hospital he had two or three similar attacks. About a week later (February 27th), he showed the classical symptoms of tubercular meningitis; vomiting; headache; apathy; slow and intermittent pulse; slight temperature; *tâche cérébrale*; somewhat retracted abdomen.

*First Puncture,* March 3d. Five cubic centimetres of perfectly clear fluid were withdrawn. At first the fluid spurted and then flowed by drops. Cultures taken from the fluid when it was withdrawn were sterile. Three days later the fluid was cloudy and cultures showed the staphy-

lococcus aureus. There were neither cells nor fibrin present.

*Second Puncture,* March 5th. Nine cubic centimetres of very slightly cloudy fluid were withdrawn. The cloudiness was caused by a finely divided sediment suspended in the fluid and was difficult to detect until the test-tube was held toward the light and gently shaken. Microscopic examination of the sediment after standing showed the presence of a few polynuclear leucocytes, many round cells with a single nucleus and fibrin. Löffler's methylene-blue solution was used to differentiate the cells. No micro-organisms were found and cultures from the fluid were sterile. The fluid contained a faint trace of albumin (less than one-twenty-fifth of one per cent.).

Up to this time there had been considerable uncertainty about the diagnosis. The possibility of a cerebral tumor could not be denied and there were a number of symptoms in the case which pointed strongly toward it. After the second puncture, however, the diagnosis of tubercular meningitis was made.

The patient was operated upon by Dr. H. L. Burrell on March 6th.

*Third Puncture,* March 9th. About ten cubic centimetres of slightly cloudy fluid were withdrawn, similar in all respects to that which was obtained from the second puncture. A guinea-pig was inoculated with some of this fluid and developed tuberculosis. The patient died on March 12th.

*Autopsy Report* (Dr. F. B. Mallory).— "On the pia, on both sides, at the vertex, centering over the fissures of Rolando and Sylvius and dipping down into the longitudinal fissure, were two areas about six centimetres long and four centimetres wide, dotted with yellowish specks, the size of pin heads. These specks were more numerous on the right side than on the left. Close to and in the longitudinal fissure they fused together, forming yellow areas which resembled fibrino-purulent exudation. No tubercles were found at the base of the brain, or in the fissures of Sylvius. The inner surface of the dura on the right side showed a number of single and agglomerated tubercles." The remainder of the report is omitted.

*Autopsy Diagnosis.*— Chronic tubercular bronchial glands; disseminated tuberculosis of the lungs, spleen, kidneys and liver; miliary tubercular meningitis.

It is not surprising to me that the fluid from the first puncture was clear, but rather that the fluid was cloudy from the two subsequent punctures, considering the small quantity of inflammatory exudation and its location.

**CASE IX.** Male, five years of age. Under observation for two weeks after the first puncture. Diagnosis, tuberculosis of the hip joint; glandular tuberculosis; disseminated tuberculosis of the lungs, liver, kidneys and spleen; tubercular meningitis.

*Clinical History.*— The patient was operated upon for a hip abscess and a day or two afterwards developed symptoms of meningitis. There was vomiting, irritability and apathy in the beginning, and later, stupor and convulsions supervened.

*First Puncture,* March 2d, about two or three days after the operation. Several cubic centimetres of slightly cloudy fluid were withdrawn. After standing for several hours there was a web-like coagulum of fibrin which extended up from the bottom of the test-tube for some distance. Microscopic examination showed numerous mononuclear cells and some polynuclear leucocytes, together with considerable fibrin. Cultures taken on blood-serum were sterile. The fluid contained a faint trace of albumin (about one-thirtieth of one per cent.).

*Second Puncture,* March 5th. Twenty-one cubic centimetres of slightly cloudy fluid were withdrawn. The first fourteen cubic centimetres escaped quite rapidly, but after that the fluid dropped quite slowly. The fluid and sediment were similar to that obtained from the first puncture. A test for sugar with Fehling's solution gave a negative result.

*Third Puncture,* March 9th. Twelve cubic centimetres of fluid were withdrawn, which was more cloudy than the

fluid from the two previous punctures. In other respects the fluid and sediment did not differ from that obtained before. A guinea-pig was inoculated with some of the fluid, and developed tuberculosis.

*Fourth Puncture, March 12th.* Several cubic centimetres of cloudy fluid were withdrawn, which was similar in all respects to that which was obtained from the previous punctures.

The patient died on March 16th.

*Autopsy Report.*—The vessels of the pia were injected, and there was considerable fibrinous exudation in the meshes of the pia, especially at the base of the brain. Miliary tubercles were found in the pia, at the base of the brain, and along the fissures of Sylvius and Rolando. The ventricles contained more fluid than normal, and the surface of the ependyma was covered with fine pin-point elevations. The lungs, liver, spleen and kidneys showed a disseminated tuberculosis, and the bronchial and mesenteric lymph-glands were enlarged and contained numerous "cheesy" foci.

*CASE X.* Premature infant of eight months. Under observation for ten days.

*Clinical History.*—The day before its death the temperature rose to 41° C. (105.8° F.). No cause could be detected by physical examination.

*Puncture, March 5th, the day of its death.* Two cubic centimetres of blood-tinged fluid were withdrawn. The operation was unattended by symptoms. Microscopically, the fluid contained red blood-corpuscles and a few white corpuscles, but no fibrin. There was a faint trace of albumin in the fluid, (about one-sixtieth of one per cent.).

*Autopsy Report.*—The lateral ventricles were dilated and contained an excess of fluid and macerated brain substance. Cultures taken from this fluid were sterile. The meninges showed no evidences of inflammation. The other organs were not abnormal with the exception of areas of atelectasis in the lungs. Cultures from the organs showed the presence of the colon bacillus.

*CASE XI.* Male, aged four months. Still under observation. Diagnosis, infantile atrophy.

*Physical Examination.*—Emaciation; pallor and lack of development; otherwise negative. The temperature was slightly sub-normal.

*Puncture, March 8th.* The fluid was at first slightly tinged with blood, but later it was perfectly clear and showed no sediment after standing. No symptoms attended or followed the operation. The fluid contained a faint trace of albumin, less than one-fiftieth of one per cent.

*CASE XII.* Male, aged four months. Under observation for seventeen days. Diagnosis, rhachitis and atrophy.

*Puncture, March 8th.* Three cubic centimetres of clear fluid were withdrawn, which contained a faint trace of albumin (less than one-fiftieth of one per cent.). The fluid showed no sediment after standing for several days. The operation had no effect on the patient.

He was discharged relieved on March 13th.

*CASE XIII.* Female, aged one month. Under observation for nineteen days. Diagnosis, obstetrical paralysis of the left arm.

*Puncture, March 8th.* Two cubic centimetres of slightly blood-tinged fluid were withdrawn. Microscopic examination showed the presence of red blood-corpuscles and an occasional white corpuscle, but no fibrin. The operation was without effect on the patient.

Discharged well on March 14th.

*CASE XIV.* Male, aged two years. Diagnosis, acute purulent meningitis.

*Clinical History.*—The patient had a chronic purulent inflammation of the right ear, and was operated on by Dr. H. L. Morse on March 6, 1896. The patient died on March 10th with symptoms of meningitis.

*Puncture* made six and a half hours after death. A very turbid fluid was withdrawn, and a purulent, yellow sediment settled quickly to the bottom of the test-tube. Cover-glass preparations of the sediment were stained with Löffler's methylene-blue solution, and showed the presence of numerous polynuclear leucocytes, fibrin and bacteria.

*Autopsy Report.*—Both cerebral hemispheres, between the pia and the dura, were covered with thick, foul-smelling pus. The exudation extended to a lesser degree over the base of the brain. There were three openings on the upper surface of the petrous portion of the right temporal bone, through which a probe could be passed through the middle ear into the external meatus. Corresponding to these openings, there was a small abscess in the right temporo-sphenoidal lobe of the brain. Cultures made from the pus showed a mixture of organisms.

*CASE XV.* Male, aged seventeen months. Still under observation. Diagnosis, rhachitis, with spasms of the larynx and convulsions.

*Clinical History.*—The patient entered the hospital on March 9, 1896, with a history of convulsions, at intervals, for the last two months. Aside from marked evidences of rhachitis, the physical examination was negative. The infant was fat, and looked perfectly healthy. The temperature was normal at the time of entrance, and remained so. During the first two weeks he had a number of convulsions, which were always preceded by spasm of the larynx.

*Puncture, March 11th.* Several cubic centimetres of blood-tinged fluid were withdrawn. After standing, the blood collected into a small drop at the bottom of the test-tube, and left the fluid perfectly clear. Microscopic examination of this drop showed it to consist of red blood-corpuscles, together with a corresponding number of white corpuscles interspersed. There was no fibrin. The fluid contained a faint trace of albumin. There were no symptoms attending or following the operation.

*CASE XVI.* Male, aged twenty-one months. Under observation for sixteen days. Diagnosis, rhachitis, bronchitis and broncho-pneumonia. Patient entered hospital March 5th.

*Puncture, March 11th.* Three cubic centimetres of clear colorless fluid were withdrawn, which contained a faint trace of albumin (about one-fiftieth of one per cent.). No sediment collected in the test-tube after standing. The operation was without effect on the patient.

*Later History.*—The patient was discharged well of bronchitis and broncho-pneumonia.

*CASE XVII.* Male, aged seven months. Under observation for two weeks. Diagnosis, pulmonary, glandular and disseminated tuberculosis.

*Physical Examination.*—Extreme emaciation, and evidences of consolidation in both lungs. Temperature slightly elevated.

*Puncture, March 16th.* Three cubic centimetres of perfectly clear fluid were withdrawn, which contained a faint trace of albumin (about one-sixtieth of one per cent.). The fluid remained without sediment for several days. No symptoms attended or followed the operation.

The patient died on March 17th.

*Autopsy Report.*—There was very extensive tuberculosis of both lungs and considerable destruction of the lung tissue in the upper and lower lobes of the right lung. Acute miliary tuberculosis of the liver, spleen and kidneys, and "cheesy" (tuberculous) bronchial and mesenteric lymph-glands.

The brain was carefully examined for evidences of tubercular meningitis, but neither tubercles nor inflammatory exudation were found. The ventricles were normal.

*CASE XVIII.* Female, aged four years. Entered hospital on March 11th and died on March 12, 1896. Diagnosis, chronic tuberculosis of the dorsal vertebrae and bronchial lymph-glands; tubercular meningitis, acute miliary tuberculosis of the lungs, spleen, liver and kidneys.

*Puncture, three hours after death.* A cloudy fluid was withdrawn. Microscopic examination of the sediment showed numerous small mononuclear cells, a few polynuclear leucocytes and fibrin. Cultures were sterile.

*Autopsy Report (Dr. F. B. Mallory).*—The convolutions were much flattened. There were numerous miliary tubercles in the pia over the convexities, but the largest number were found in the fissure of Sylvius and at the base of the brain. Tubercles were also found in the gray and white matter of the occipital and frontal regions and also in the

white matter of the cerebellum. The endyma was studded with minute pin-point elevations. (The remainder of the report is omitted.)

**CASE XIX.** Female, aged six months. Under observation for thirteen days. Diagnosis, slight rachitis and anemia, persistent vomiting.

*Clinical History.*—The patient was sent to the hospital with a provisional diagnosis of tubercular meningitis. There was a history of irritability, obstinate vomiting and frequent attacks of crying.

The physical examination made on March 16th, two days after coming to the hospital, was negative except that the infant was pale and looked ill. The temperature was practically normal during her stay in the hospital.

*Puncture, March 16, 1896.* Several cubic centimetres of perfectly clear fluid were withdrawn. The fluid contained no sediment after standing for several days. The patient was not affected by the operation.

*Later History.*—The child was fed upon modified milk once or twice by means of a stomach-tube, and after several days ceased to vomit and took her food quite well. It was afterward learned that the infant had been given coffee for some time. She was discharged relieved.

**CASE XX.** Male, aged eleven months. Under observation for about six weeks. Diagnosis, rachitis, anemia and atrophy.

*Clinical History.*—During his stay in the hospital the patient gained somewhat in weight and was otherwise improved. The physical examination showed marked evidences of rachitis, consisting of deformity of the thorax, epiphyseal enlargement, a well-marked rosary, etc. In addition, the patient was very much emaciated and anemic. The examination of the organs was negative.

*Puncture, March 18th.* Several cubic centimetres of clear fluid were withdrawn without producing any effect on the patient. The fluid contained no sediment after standing.

*Later History.*—The patient was discharged relieved, about three weeks later.

**CASE XXI.** Male, aged seven months. Under observation for one week. Diagnosis, rachitis and atrophy.

*Clinical History.*—The patient showed evidences of rachitis and was much emaciated. The temperature was normal.

*Puncture, March 18th.* Several cubic centimetres of clear fluid were withdrawn without producing any effect on the patient. There was no sediment in the fluid after standing for several days.

*Later History.*—The patient was discharged, after remaining a week in the hospital, relieved of some indigestion which he had at entrance.

**CASE XXII.** Male, aged seven months. Under observation about twelve days. Diagnosis, hydrocephalus.

*Clinical History.*—The patient entered the hospital on March 21st for the purpose of having some of the fluid withdrawn from the brain by means of lumbar puncture. Measurements were as follows:

Head, circumference . . . . .	55 cm.
Antero-posteriorly . . . . .	38 cm.
Across the vertex of the head between the zygomatic processes . . . . .	33 cm.
Thorax, at level of nipples, circumference . . . . .	37½ cm.
Abdomen, at level of umbilicus, circumference . . . . .	39 cm.
Length of child . . . . .	67½ cm.

*First Puncture, March 22d.* One hundred and five cubic centimetres of clear fluid were withdrawn. At times, when the infant moved, the fluid contained blood, but became clear again. The withdrawal of the fluid did not appear to affect the patient unpleasantly. The pulse was a little slower temporarily. The withdrawal of the fluid caused the fontanelle and sutures, which were widely open and tense, to become soft and concave. The fluid contained no sediment after standing for several days. The fluid contained a faint trace of albumin (one-fortieth of one per cent.).

*Second Puncture, April 1st.* The patient had been vomiting for two or three days previous to the second puncture and was rather somnolent. Five cubic centimetres of perfectly clear fluid were withdrawn which contained no sediment after standing for several days.

The ventricles were washed out a day or two later by Dr. Augustus Thorndike and the child died the same day. No autopsy was obtained.

**CASE XXIII.** Male, aged three and a half months. Under observation for two weeks. Diagnosis, pulmonary tuberculosis; chronic tuberculosis of the bronchial and mesenteric lymph-glands; disseminated tuberculosis of the liver, spleen and kidneys.

*Clinical History.*—The infant was said to have had pneumonia for a week, when he entered the hospital March 13, 1896. During his stay in the hospital the temperature ranged from 36.4° C. (97.5° F.) to 38.5° C. (101.3° F.). The physical examination showed extreme emaciation and evidences of consolidation in both lungs. For five or six days preceding his death there was considerable apathy and some retraction of the head.

*Puncture, March 24th.* Several cubic centimetres of perfectly clear fluid were withdrawn, which contained no sediment after standing for several days. The operation produced no effect upon the patient. The infant died on March 27th.

*Autopsy Report.*—There was extensive tuberculosis of both lungs with some destruction of the lung tissue in the left upper lobe. Extensive chronic ("cheesy") tuberculosis of the bronchial and mesenteric lymph-glands. Miliary tuberculosis of the liver, spleen and kidneys.

*Brain.*—With the exception of injection of the vessels of the pia, the brain was normal. Careful search was made for miliary tubercles and exudation in the meninges with negative result. The endyma was perfectly smooth.

**CASE XXIV.** Male, aged ten months. Under observation for four days. Diagnosis, tubercular meningitis.

*Clinical History.*—The patient entered the hospital April 9, 1896. There was a history of three weeks' illness which began with vomiting. The infant was irritable and restless and during the last four days he was apathetic. The physical examination was negative with the exception of considerable apathy. The temperature was normal while in the hospital.

*First Puncture, April 9th.* Five cubic centimetres of very slightly cloudy fluid were withdrawn. It was necessary to compare this fluid with some perfectly clear fluid in order to be certain of the cloudiness. On the following day the fluid contained a scarcely perceptible web of fibrin. Microscopic examination showed a number of small mononuclear cells, a few polynuclear leucocytes and fibrin. Cultures were sterile.

*Second Puncture, April 11th.* About ten cubic centimetres of fluid were withdrawn, which was more cloudy than the fluid from the first puncture. Microscopic examination of the sediment showed numerous small mononuclear cells, a few polynuclear leucocytes and fibrin. Cultures were sterile.

A guinea-pig was inoculated with two and a half cubic centimetres of the fluid and developed tuberculosis.

*Later History.*—Upon inquiry it was learned that the infant died on April 21st. There was a history of convulsions during the last three days.

**CASE XXV.** Female, aged five years. Still under observation. Diagnosis, probable cerebral tumor.

*Clinical History.*—There was a history of vomiting, headaches and dizziness, which had occurred more or less frequently for six months. The patient was rather stupid when she entered the hospital on April 14, 1896, but this symptom disappeared after a day or two and has not recurred. An examination of the eyes showed optic neuritis, probably in a receding stage. The ears were normal. An examination of the other organs was negative. The patient has had a number of attacks of headache and the afternoon temperature has been slightly elevated most of the time. The urine was negative.

*First Puncture, April 16th.* Several cubic centimetres of clear fluid were withdrawn without causing any effect on the patient. There was no sediment in the fluid after standing. Cultures were sterile. The fluid contained a

faint trace of albumin (less than one-fiftieth of one per cent.). Equal parts of the fluid and Fehling's solution when heated, showed a reddish tinge and a very slight precipitation.

*Second Puncture*, April 28th. About fifteen cubic centimetres of fluid were withdrawn which was tinged with blood at first and afterward became clear. The patient cried while the puncture was being made and continued to cry afterward, complaining of headache. The fluid contained no sediment after standing. Cultures were sterile. Fluid contained no albumin by the heat and acetic-acid test.

**CASE XXVI.** Female, aged four years. Under observation for two days. Diagnosis, acute suppurative myositis; acute purulent pericarditis; acute fibrinous pleurisy; multiple abscesses of heart, lungs, kidneys, liver and brain.

*Clinical History.*—The patient entered the hospital on April 27, 1896. She was said to have been well until one week before, when she complained that her hip was "sore." Swelling of the right thigh was noticed on April 26th. Up to this time she had played about the house. On April 27th, a loud pericardial friction rub was heard, which disappeared on the next day. The patient showed evidences of severe infection, consisting of somnolence, high temperature, rapid pulse and respiration and cyanosis. The patient died on April 28th.

*Puncture*, April 28th. Five cubic centimetres of very slightly cloudy fluid were withdrawn. On the following day the cloudiness persisted and there was no sediment at the bottom of the test-tube. Microscopic examination failed to detect any cells or fibrin. A relatively small number of micrococci were found. The fluid contained less than one-fortieth of one per cent. of albumin. Cultures on blood-serum showed between forty and fifty colonies of staphylococcus pyogenes aureus.

*Autopsy Report* (Dr. F. B. Mallory).—"Convolutions not flattened in the least. In the floor of the left lateral ventricle, in the anterior portion of the lenticular nucleus, was a dark-red area, two millimetres in diameter, with slightly softened centre on section. Section throughout the brain substance showed two similar, but smaller, areas lying in the gray matter of the cortex. Nothing abnormal found in the cortex or cord." The remainder of the report is omitted.

**CASE XXVII.** Female, aged three and a half months. Under observation for several days. Diagnosis, infantile atrophy.

*Clinical History.*—The patient was sent to the hospital from my out-patient clinic because she had been somewhat stupid for a day or two, and there was a question of tubercular meningitis. The temperature was slightly elevated.

*Puncture*, May 3d. Several cubic centimetres of blood-tinged fluid were withdrawn, which contained less than one-fiftieth of one per cent. of albumin. A small drop of blood collected in the bottom of the test-tube after standing, and left the fluid clear. No formation of fibrin occurred.

*Later History.*—After two days, the infant was as bright as usual, and was sent home.

**CASE XXVIII.** Male, aged two years and three months. Under observation for several days. Diagnosis, hydrocephalus.

*Clinical History.*—The patient entered the hospital May 9th, with the history that he had not been able to walk for three weeks. The physical examination was negative, with the exception of increased patellar reflexes and a head which was larger than normal. The measurements of the head were as follows: circumference, 53.5 cm.; antero-posterior measurement, 34 cm.; transverse measurement, 30 cm.

*Puncture*, May 11th. About seven cubic centimetres of blood-tinged fluid were withdrawn, which contained one-sixtieth of one per cent. of albumin. Cultures were sterile. A small drop of blood collected in the bottom of the test-tube after standing. There was no formation of fibrin.

**CASE XXIX.** Female, aged three years. Under observation for seven days. Diagnosis, tubercular meningitis, chronic tuberculosis of the bronchial glands, acute miliary tuberculosis of the lungs.

*Clinical History.*—The patient entered the hospital May 11, 1896. There was a history of measles six weeks before, followed by a mild broncho-pneumonia. The present disease began a week before her entrance into the hospital, with vomiting. There was a purulent discharge from the left ear which had lasted two or three days. On May 11th, the patient was somnolent, and the extremities were somewhat rigid; otherwise the physical examination was negative. Temperature was somewhat elevated.

*First Puncture*, May 11th. About ten cubic centimetres of slightly cloudy fluid were withdrawn, which contained one-thirtieth of one per cent. of albumin. A slight coagulum of fibrin formed in the fluid after standing. Microscopic examination showed numerous small mononuclear cells, a few polynuclear leucocytes and fibrin. Cultures were sterile.

*Second Puncture*, May 12th. Dr. S. J. Mixer trephined the skull over the left ear and tapped the lateral ventricle, but obtained no fluid. Lumbar puncture was then performed, and fifty cubic centimetres of slightly cloudy fluid were withdrawn, similar in all respects to that which was withdrawn the day before. A portion of the brain substance which was tense and congested, and which protruded through the trephine opening, gradually grew smaller and paler and sank below the edge of the skull, as the fluid was withdrawn from below. After the effects of the ether had passed off, the patient was brighter than she had been during the day.

*Third Puncture*, May 13th.—The patient's general condition was not as good. There was marked stupor; inability to swallow; the pupils were unequal and did not react to light; the pulse was rapid and the temperature was somewhat elevated. Forty cubic centimetres of slightly cloudy fluid were withdrawn, which was similar to that withdrawn before. After the withdrawal of the fluid, the patient did not rouse as she had done the day before.

A guinea-pig was inoculated with two cubic centimetres of the fluid obtained from the second puncture.

*Fourth Puncture*, May 16th.—About seven cubic centimetres of slightly cloudy fluid were withdrawn, similar in all respects to that obtained before.

The patient died on April 18th.

*Autopsy Report* (Dr. Wm. F. Whitney).—"Dura not adherent to calvaria. The meshes of the pia over the cortex filled with a slightly yellowish-green exudation. In left parietal lobe, opposite the wound, the brain substance was softened and reddened, evidently the result of the operation. Over the base of the brain, especially in the region of the pons, a thick, yellowish, fibrinous exudation was present, completely obscuring the outlines. On section of the ventricles, a little opaque fluid escaped. The brain substance was pale, soft and moist. There were miliary tubercles in the meshes of the pia. A hemorrhagic line could be followed from the wound to the caudate nucleus of the left side. In the exudation on the base of the brain, numerous opaque granulations were found, some of them apparently caseous. There was no inflammation of the temporal bone." Remainder of report omitted. Abdomen not examined.

To summarize:

(1) The normal cerebro-spinal fluid contains neither cells nor fibrin and is perfectly clear.

(2) In cases of meningitis, the cerebro-spinal fluid is invariably cloudy when withdrawn. The degree of cloudiness is to some extent proportionate to the amount and character of the exudation in the meninges.

(3) The cloudiness is caused by cells. The character of the cells differs with the variety of meningitis. After withdrawal, more or less fibrin is formed in the fluid. The presence of these cells and fibrin is pathognomonic of inflammation in the meninges.

(4) The cloudiness is oftentimes so slight that close observation is necessary to detect it.



(5) The operation is not difficult to perform on infants and children. It is not dangerous, if strict cleanliness is observed.

(6) The differential diagnosis between the various kinds of meningitis can be made by microscopic examination of the sediment, by cultures taken from the fluid and by inoculation experiments.

(7) Inoculation experiments afford the surest means of determining tubercular meningitis. It is of value to distinguish between the varieties of meningitis in order to determine if tubercular meningitis is recovered from.

(8) In the normal fluid, a faint trace of albumin is usually present, about one-fiftieth of one per cent., or less, by quantitative analysis. In meningitis, the amount of albumin is increased and has varied from one-thirtieth to one-tenth of one per cent.

(9) In one case a diagnosis of general infection with the staphylococcus pyogenes aureus was made from cultures taken from the cerebro-spinal fluid.

#### EXTRA-UTERINE PREGNANCY FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.<sup>1</sup>

BY ELISHA S. BOLAND, M. D., OF SOUTH BOSTON.

(Concluded from No. 6, p. 139.)

##### RESULTS.

AFTER operation for extra-uterine pregnancy, convalescence is usually very rapid and complete. The antecedent conditions having been so little different from normal, the troublesome sequelæ that so try the family physician are usually missing. The patient bears children with no greater risk than before the laparotomy. Intestinal obstruction from adhesions or internal hernias are practically unknown. The general feeling of well-being, and full capacity for the usual occupation, come sooner here than can be expected where gradual structural changes have preceded operation.

CASE I. Operated on at St. Elizabeth's Hospital, October 17, 1892. Married. Age thirty-eight. Has had three living children and miscarried once with twins.

Menses regular but excessive. When her third living baby was four months old, and while still nursing, her menstruation was excessive, and recurred every five weeks until October, when it failed to appear, and four days after it was due severe pelvic pain set in with a slight show October 10th. This severe pain recurred with faintness October 12th and the evening of the 16th.

On the 17th, when I was called, I found her in bed with pinched, pallid features; cold extremities; rapid, weakened pulse; and some dulness in the lower abdomen on the left side. Morphia with atropia was given freely, as the pain and prostration were intense, and external heat was applied.

The family physician met me as soon as he could be reached, and while agreeing with me, was unable to care for her. Dr. Frederick W. Johnson was then summoned, confirmed the diagnosis, and secured the patient's admission to St. Elizabeth's Hospital. She

was taken there immediately, a distance of about three miles, and operated upon without delay.

The abdomen contained a large amount of clotted and some fluid blood, and an unruptured amniotic sac as large as a filbert containing an embryo the size of a honey bee. She rallied slowly but completely, and went to her home in twenty days. She is at the present time in perfect health, works hard and has a child two years old, which was born about two years and a half after her operation.

Dr. Whitney's report, Case I: "The specimen consisted of about six or seven centimetres of the Fallopian tube with the ovary attached, and an embryo about three centimetres long in an unbroken sac filled with clear fluid. About two centimetres from the fimbriated end the tube was dilated into an egg-shaped enlargement about three centimetres in its longest diameter. The free surface was torn, and from this a shaggy tissue, infiltrated with blood, projected. Microscopic examination showed this to be made up of branching fibrous filaments. The ovary, to which the end of the tube was slightly adherent, contained a large corpus luteum."

CASE II. Operated upon at Carney Hospital, October 4, 1894. Married. Age twenty-six. Had one child. Nursed her baby twenty-two months, and did not menstruate. Always had dysmenorrhea. After weaning her baby resumed menses for four months, but in September, 1894, missed her period, but suffered pelvic pain, which was continuous until her operation; was treated for this pain, but with little result. On October 4th, at 6.30 P.M. she was seized with such severe pain in the lower abdomen that she seemed as if in labor. The extremities became cold, the face pallid and beaded with sweat, pulse 120 and temperature subnormal. I was called at 7 P.M. and found her condition so alarming that I immediately telephoned to Dr. Frederick W. Johnson, with a view to an operation if he agreed with my diagnosis. Meanwhile, morphia and atropia were given subcutaneously and external heat applied. Pain was thus relieved, but no other improvement was effected. The abdomen was tender to pressure, and uniform dulness extended over the whole of the left side.

Upon Dr. Johnson's arrival it was decided to remove her at once to the Carney Hospital, where she was operated upon at 9 o'clock P.M. Her pulse at that time was 140, and it was necessary to administer strychnia and brandy at intervals. So exsanguined was she, that no bleeding occurred when making the abdominal incision. The peritoneal cavity was found to contain more than a quart of blood, both clotted and fluid. The blood was found to have come from an extra-uterine pregnancy on the right side. (See Dr. Whitney's appended report.)

Transfusion was done after a very hasty operation, and despite her desperate condition she made a good recovery, leaving the hospital at the end of twenty days. She is at the present time pregnant and almost at term, being in excellent health and able to perform her housewifely duties.

Dr. Whitney's report, Case II: "The specimen removed by you October 4th consisted of a portion of the tube and an ovary. About one inch from the fimbriated end was a dark-red, nodular swelling covered with clotted blood; this measured about one and one-half inches in diameter. On section there was found in the centre a cavity about half an inch long,

<sup>1</sup> Read before the Massachusetts Medical Society, June 10, 1896, and recommended for publication by the Society.



lined with a smooth membrane, and in which was the remains of a small embryo. In the ovary was a corpus luteum about three-quarters of an inch in diameter."

**CASE III.** Operated upon at the Carney Hospital, March 19, 1895. Married. Age thirty-three years. Has had four living children and one miscarriage. Enjoyed good health except that at her miscarriage the placenta was retained, giving rise to a severe and protracted flowing with sepsis. After that, however, she had borne one healthy child at full term, though she had a severe post-partum hemorrhage. She had fully recovered when conception took place. For two periods she did not menstruate, but instead observed the decidual shedding, with more or less blood. Had no nausea, but supposed herself to be pregnant.

I saw her — not professionally — two or three days before rupture occurred, but she was not ill enough to consult me at that time. On the 19th of March, while preparing her husband's dinner, she was interrupted by a call from a neighbor. Leaning back against a table, she suddenly felt the rupture accompanied with acute pain and faintness. She was assisted to a sofa, and her husband at once started for my office, but met me on the street, and thus I reached the patient in less than half an hour after her seizure. Already her face was blanched with the characteristic pallor and beaded with sweat. She was so weak as to be hardly able to speak. A rapid examination satisfied me of the nature and gravity of the trouble, and after giving morphia and atropia subcutaneously and applying external heat, I informed the husband of my suspicions and urged counsel and an operation.

Learning that Dr. Rufus A. Kingman was at the Carney Hospital I immediately summoned him. In accordance with his advice, she was at once carried to the Carney Hospital in a hack. So low had she become by this time that she took no interest in the arrangements in her behalf, and twice during the operation we expected her death as the pulse became imperceptible. On opening the abdomen a large amount of fluid blood was found and a ruptured tube. Owing to her extremely reduced condition, the peritoneal toilet was hurried and incomplete, and she was put to bed, and external heat applied. Stimulants were given by the rectum, and full doses of strychnia and normal salt solution were injected to give the heart something to work on, and help it do it.

Her convalescence was slow, but her recovery at the expiration of seven weeks was complete, and she is to-day well, and able to enjoy life and perform her usual duties.

**CASE IV.** Operated upon at Carney Hospital, October 8, 1895. Married. Age forty years. Has had two children at term. Has had seven miscarriages at from four to six months. Menses normal. Very nervous temperament. Says that she has had peritonitis (probably pelvic) four times. This case was the only one in the five where a positive diagnosis of rupture of an extra-uterine pregnancy could not be made. There were some circumstances which effectually masked it, and although there was a sudden and severe exacerbation of pain, the hemorrhage though large was gradual, and the striking features of peritoneal collapse were missing. Conception must have taken place about August 12th. There was menstrual irregularity, but no absolute suspension of the function, and there were vague pelvic pains preceding the

rupture, which occurred at stool. Dr. Rufus Kingman saw her twice in consultation, and narrowed down the diagnosis to one of two things, one of which was extra-uterine pregnancy.

She was admitted to the Carney Hospital and operated upon October 8th by Dr. Kingman. This was the case previously referred to in my paper, where the blood clotted so firmly and so locally that a visible tumor was outlined in the lower left quadrant of the abdomen; otherwise the case presented nothing of note and made a good though slow recovery.

The ruptured tube was found, but the embryo was lost in the blood-clot. The specimen removed consisted of the left ovary and the distal part of the corresponding tube which had ruptured. It was examined by Dr. Whitney, but his report has been misplaced. As the other ovary was found to be in a bad condition it was, agreeably to her previously expressed wish, removed also.

**CASE V.** Operated upon at Carney Hospital, March 2, 1896. Married. Age thirty years. General health always good. Menses painless but abundant and prolonged. For some weeks before rupture she was under treatment at a dispensary for some pelvic trouble. Monday evening, March 2d, she spent playing checkers with her husband, and was in her usual health. About 9 P.M., before retiring, she took an enema to act on the bowels. Severe pain began in the abdomen, which by midnight had become very acute. At one o'clock she believes she began to faint, and being alone, her husband being asleep, she lay on the floor for some time until found there by her husband, who came for me shortly before 4 A.M.

So inadequate was his description of his wife's condition that I came near dismissing him with some soda mint tablets. It was a very stormy night with deeply-drifted snow, and though reluctant I went with him literally "coolly" enough. My nonchalance vanished, however, the minute I saw her. To say that she both looked and felt corpse-like hardly overstates it.

Though still suffering from intense tearing pains, her blunted feelings made her less complaining. At times she talked deliriously. Her pulse was 138, and at times could not be counted. Her pupils were dilated and irresponsible to light. Her face, hands, arms, feet and legs were cold. Temperature under the tongue was 97°, respiration shallow. Slowly I got a history of pain earlier in the night with vomiting and rectal tenesmus. The left lower abdomen gave evidence of effused blood. Vaginal examination was negative. I gave her subcutaneously one-third of a grain of morphia with one-fiftieth of a grain of atropia, and applied heat externally. She began to get easier, and at the same time unwilling to entertain the idea of the operation which I urged.

Getting a hack before daylight, telephoning to Dr. Frederick W. Johnson to meet us at the Carney Hospital, and arrange for our reception, was not quite so hard as was the task of convincing the patient and her husband of the urgency of the operation; but his failure to grasp the situation was fortunately offset by his unquestioning acceptance of what I said, and I obtained his consent. Such circumstances justify imperiousness. The neighbors protested against taking a sick and reluctant woman out in such a storm, but we carried our point — and the patient to the hospital, before the latter was open.

Before taking ether, she was practically unconscious,

and strychnia in full doses was given, and a quart of normal salt solution injected subcutaneously before it seemed safe to give the ether. Upon opening the abdominal cavity a large quantity of blood was found, partly clotted, and in the ruptured sac was found the unruptured clear amniotic sac containing a fetus as large as a house fly. The tube and ovary were tied off, the clotted blood washed out, and the wound closed without drainage. Stimulants, strychnia and salt solution were given as needed, and the case proceeded to a successful termination; the patient doing remarkably well, and returning to her home in four weeks, being at the present time in excellent health, and able to do her housework.

Dr. Whitney's report, Case V: The specimen from Case V consisted of a portion of the tube and ovary. Close to the uterine end was a dilatation the size of the end of the finger from which a shaggy red mass protruded. Microscopic examination showed small, flat, branching tufts similar to the villi chorionic, of about the sixth to the eighth week. With this was a smooth, unruptured sac, containing an embryo a few millimetres in length. The ovary was of normal size, and contained a large corpus luteum with a wide yellow border.

#### ANALYSIS.

An analysis of these five cases shows that only three had been conscious of any pelvic trouble. All but one had borne children. Three had had from one to six miscarriages. All but one were wives of working-men, and from necessity led active, busy lives. One was in poor health. Their ages ranged from twenty-six to forty years. In all there had been between conception and rupture, menstrual irregularity, that is, the individually usual quantity, quality and date were changed and the dark, shreddy, scanty, tedious discharge of decidual debris, with probably some menstrual fluid, deceived and confused the patients.

In all the event of rupture was marked, sudden and utterly prostrating. In all the pain was excruciating, calling for full doses of morphine subcutaneously. In all five the pregnancy developed in the tube. In four peritoneal collapse was marked. In all the physical signs of effused blood in the peritoneal cavity were easily made out by palpation and percussion.

I believe that, without operation, four of these cases would have died before reaction from the shock and hemorrhage. In the exceptional case, the bad general state and the large amount of effused blood would have made her recovery, without operation, doubtful and slow at best.

The time of detention in the hospital after operation ranged from twenty to forty-two days, but three were out inside of a month.

#### CONCLUSION.

My experience in these five cases of extra-uterine pregnancy seems to warrant me in offering the following postulates:

- (1) Extra-uterine pregnancy is more common than has generally been supposed.
- (2) Inter-peritoneal hematocoele is almost always the result of a ruptured extra-uterine pregnancy.
- (3) Diagnosis of extra-uterine pregnancy in the pre-placental period, before rupture, is uncertain and seldom urgent, and if a diagnosis is made, the time

for operation can be selected to suit attending circumstances.

(4) Diagnosis after rupture should be made by the general practitioner. It is easy and of greatest urgency in view of prompt interference.

(5) Prompt laparotomy after rupture is the only safe and conservative course.<sup>1</sup>

(6) The condition of peritoneal collapse, that is, shock and hemorrhage, is no bar to immediate and successful operation.

(7) The operation of laparotomy for extra-uterine pregnancy is comparatively easy, and the mortality from it is low.

(8) The after-effects of the operation are milder in extra-uterine pregnancy than in laparotomies for appendicitis, pus tubes, uterine fibroma, or ovarian cystoma, and do not involve sterility.

I cannot close this paper without expressing my warmest thanks personally, and on the part of these five poor women, to Drs. F. W. Johnson and R. A. Kingman, to whose promptness, liberality and skill these patients owe their lives, and also to Dr. W. F. Whitney, whose exact pathological work gives value to these reports.

### Clinical Department.

#### A CASE OF EXTRACTION OF A BIT OF COPPER FROM THE VITREOUS WHERE X-RAYS HELPED TO LOCATE THE METAL.<sup>1</sup>

BY CHARLES H. WILLIAMS, M.D., BOSTON.

MR. J. M., seventeen years old, was brought to me June 5, 1896, by Dr. Shurtliff, of Somerset, with this history: the day before he had placed a Flobert rifle cartridge in a vise and hammered it; the cartridge exploded and a piece struck his left eye. Examination showed no injury to the eyelids, but a vertical cut extended two-thirds across the cornea, the anterior chamber was empty, and the pupil was filled with a mass of opaque lens substance. Under atropine there was some adhesion between the iris and lens capsule, and no view could be had of the interior of the eye on account of the opacity of the lens. There was very little redness of the sclera and no complaint of pain. Light projection was fairly good upward, inward and outward, but uncertain downward; fingers could not be counted.

It was hard to decide whether this injury was caused by a piece of cartridge which had struck the eye and then rebounded, or whether the metal had lodged within the eye. No use could be made of the electro-magnet for diagnosis or removal, as the metal was probably copper, and in order to throw some light on the question of its being still in the eye two radiographs were made by means of x-rays, through the kindness of my brother, Dr. Francis H. Williams, and

<sup>1</sup> Read at a meeting of the American Ophthalmological Society, July 16, 1896.

<sup>2</sup> I regret to have to record a fatal case which clinches this postulate. Nineteen days after this paper was presented, while it was still in the printer's hands, I saw in consultation another case of ectopic gestation which was quite typical. At the time I saw her the rupture was fourteen hours old. Together with her family physician, I urged a prompt laparotomy. Through the patient's utter refusal to go to the hospital, however, it was forty hours after rupture before the operation could be performed. She lived about a week. I am convinced that, had the operation been done when it was first urged, the patient would have recovered, as her condition was no worse than that of three of my cases.

Professor Norton, at the Massachusetts Institute of Technology. The apparatus used was a Wimshurst machine, which had twelve plates each twenty-six inches in diameter and gave an almost continuous series of sparks. The principal advantages of this apparatus were that it did not break the Crookes tubes, and that the rays were constantly given off from one electrode so that a better defined picture could be made than with the usual form of alternating current and induction coils where first one electrode and then the other becomes the source of rays.

A preliminary experiment was made by having Professor Norton lie on the table with his left cheek resting on the plate-holder and a bent piece of copper wire one sixteenth of an inch thick on his right eyelid, the Crookes tube being placed about eight inches from his head so as to throw a shadow of the wire through his eye onto the distant plate. After ten minutes' exposure the plate showed, on being developed, a well-defined picture of the bent copper wire. The patient was then laid on the table with his left or injured eye close to the plate-holder, resting on it as on a pillow, while the Crookes tube was placed so that the rays passed partly across the bridge of the nose and partly through the thin nasal and orbital bones to the injured eye and so on to the plate. After ten minutes' exposure the developed plate showed what appeared to be a foreign body a little back of the centre of the eyeball. A second radiograph with the tube in a different position showed no foreign body, but this was accounted for by the fact that the metal when found was a thin strip, therefore the rays in the first case may have struck it on the flat and given a picture, and in the second case have struck it edgewise with no effect.

It is much more difficult to get a satisfactory x-ray picture of a foreign body in the eye, than in other parts of the body where there is no surrounding bony wall, as in the orbit, to make a poor conductor of the rays; but, as this case shows, a picture of such a body can be taken by using a powerful apparatus even under these unfavorable conditions, and such a picture can be of use in determining the presence of the foreign body if it is of sufficient size to give a radiograph impression. In this case the history, the condition of the eye and the assurance given by the radiograph led me to operate, hoping to find and remove the metal.

Under ether, a conjunctival flap was made between the external and inferior rectus muscles, a cataract knife was then passed through the sclera into the vitreous, making a cut about three-eighths of an inch long parallel to the edge of the cornea and about three-sixteenths of an inch from it. Through this cut a curved iridectomy forceps was introduced, and a hard substance was finally grasped in the posterior portion of the vitreous and extracted. This proved to be a thin, nearly straight strip of copper, one-fourth of an inch long by one-eighth of an inch wide and of the thickness of the cartridge shell. There was considerable hemorrhage from the wound during the operation, and this extended into the shallow anterior chamber, but when the protruding vitreous was excised and the wound closed by bringing the conjunctival flap together with three fine sutures, the bleeding nearly ceased and gave no further trouble. The eye was irrigated with a 1-to-6000 solution of corrosive sublimate before and during the operation, and dressed with an absorbent cotton pad and flannel roller bandage. No anodyne

was required during the whole course of the healing, and there was never any complaint of severe pain in the eye. On the eighth day the conjunctival sutures were removed and the scleral wound was healed. There was some injection of the ocular conjunctiva, but no swelling of the eyelids or pain.

The patient was sent home on the eighth day, and at the end of a week, and again in two weeks, reported in person. There had been no bad symptoms, the corneal wound had closed, there was a development of fine vessels from the edge of the cornea toward the corneal wound, and the ocular conjunctiva showed less congestion. At the date of the last visit the eyeball had begun to shrink in size, and at the site of the scleral wound there was a slight depression. There was no perception of light in the injured eye at this time, and the cornea was not clear enough to allow an inspection of the interior of the eye. The other eye was normal in sight and condition.

July 11th, or about five weeks after the original injury, the patient reported to me, saying that the day previous he had hit the injured eye with a bit of wire, most of the blow falling on the outer edge of the orbit. The eye was red and tender, and he complained of occasional flashes of light before the sound eye during the last few hours. Up to this time both eyes had been quiet, and it seemed as if at least a good-looking eyeball could be preserved on the injured side; but this second accident made it necessary to advise enucleation of the injured eye on account of danger of sympathetic inflammation, and this was done the next day. Vision remains normal in the sound eye.

This case is interesting as being the first, so far as I am aware, in which a piece of metal has been located by the x-rays in the vitreous and successfully extracted from a living eye.

## Reports of Societies.

### AMERICAN MEDICAL ASSOCIATION.

FORTY-SEVENTH ANNUAL MEETING, ATLANTA, GA.,  
MAY 5, 6, 7 AND 8, 1896.

#### SECTION ON SURGERY AND ANATOMY.

(Concluded from No. 6, p. 143.)

#### SOME MECHANICAL CAUSES OF INTERFERENCE WITH THE ACTION OF THE STOMACH AND THEIR SURGICAL RELIEF.

DR. W. J. MAYO, of Rochester, Minn., in speaking of this subject, divided the cases into two classes: first, those which are caused by influences which act from within the cavity of the stomach or its immediate connections, such as a tumor, cicatrix or a foreign body which may obstruct its inlet or outlet or prevent its normal muscular action; and, second, those which act from without the stomach, and interfere either by pressure or adhesion, obstructing its inlet or outlet, or by fixing some part of its wall prevent its functional action. The history of the case, physical examination, the distention with air and the test meal constitute the main diagnostic resources. The amount of free hydrochloric acid is of some service when taken into consideration with the physical examination and the history.

The treatment of the forms of obstruction due to stenosis as a result of scar tissue is exceedingly try-

ing. Some of the less resistant cases when seen early can be dilated by means of bougies passed through the mouth. If it is impossible to pass a bougie, retrograde dilatation by means of gastrotomy is a rational procedure, and the olive-tip whalebone bougies are the instruments of most value. In performing gastrotomy Fenger's oblique left lateral incision through the abdominal walls over the cardiac orifice is the most satisfactory. Gastrotomy for the removal of foreign bodies is a very effective operation. Gastrostomy for the purpose of artificial feeding subjects the patient to great annoyance in the way of leakage. For temporary purposes the Witzel method is of the greatest benefit, as immediately after the removal of the tube the fistulous tract closes, while for permanent feeding Frank's spout method is undoubtedly the best. Obstructions at the outlet of the stomach are exceedingly common, and many cases, especially those of pyloric stenosis secondary to ulcer, are too often pronounced malignant without proper examination. For the relief of non-malignant stricture at the pylorus the Hœnke Mukuelitz pyloroplastic operation is the one of choice, and is wonderfully well adapted to the average case.

Among the external causes of interference with the stomach, adhesions of the pylorus or duodenum to the gall-bladder due to the inflammation excited by gall-stones is not infrequent. The most common cause of external interference with the action of the stomach is adherent omentum. Irreducible omental hernia are almost always accompanied by gastric distress, which disappears after the radical cure of the hernia.

#### THE EXPLORATION OF THE BRAIN WITH A NEEDLE AND SYRINGE THROUGH CAPILLARY HOLES DRILLED THROUGH THE SKULL.

DR. EDMOND SAUCHON, of New Orleans, La., advanced this method as a substitute for trephining. He urged the simplicity of the procedure, its comparative safety and the ease of its application as points in its favor. By its employment many lesions, such as abscesses, hard cysts and tumors may be readily diagnosed and located. In tumors, however, of the same consistency as the brain this method would be of no avail unless some of the particles expelled from the needle gave some information as to their character under the microscope. The author employs a drill to which is added an adjustable guard to limit the penetration of the instrument. The punctures are made under antiseptic precautions, and when the inner table has been reached or but partially drilled through, the instrument is withdrawn.

The perforation of the skull may be readily completed with the point of a No. 1 aspirating needle attached to a syringe. Several holes may be drilled at a distance from one another at the same operation. The danger of hemorrhage is but trifling according to the observations of the author on dogs and the reports of Spitzza, Meinhard, Schmidt and others.

DR. THOMAS H. MANLEY, DR. NICHOLAS SENN and DR. A. H. FERGUSON, in discussing this paper, thought that the usefulness of the method was limited and could in no sense be used as a substitute for trephining.

DR. F. B. TURCK, of Chicago, Ill., read a paper on  
A NEW TREATMENT OF SURGICAL SHOCK,  
and gave a practical demonstration of his method.

#### LIGATION OF THE EXTERNAL CAROTID ARTERY IN CONJUNCTION WITH EXSECTION OF THE JAWS AND OF THE INOPERABLE DISEASES OF THE SAME.

DR. WILLIAM FERRIN NICHOLSON, of Atlanta, Ga., read an interesting paper on this subject. He referred at some length to cases on which he had performed the operation of ligation of the external carotid artery and of the good results which he had obtained. An incision should be made from two to four inches long to the inner side of the sterno-cleido-mastoid muscles, from two to four inches in length according to the depth of the neck. The centre of the incision should be at a point parallel with the upper border of the thyroid cartilage. After the skin and deep fascia have been cut through, the work may be completed with the handle of a scalpel and the finger, so that the vessel can be rapidly approached without danger. The chief obstacle to be encountered is the venous anastomosis between the facial, lingual and superior thyroid veins, their combined trunks making in some cases an enormous vessel. Ordinarily those vessels may be pulled aside when the division is at the normal point; sometimes it is necessary to apply the forceps and cut between them. The point of ligation varies considerably, and it must be remembered that the external carotid is the nearer to the median line. The material employed for the ligature and for the sutures in every case was catgut. In five of the cases the only dressing applied was an iodoform and collodion scab. Not a single case required a second dressing.

#### THE TECHNIQUE OF REMOVING THE APPENDIX VERMIFORMIS CÆCI, WITH THE REPORT OF ONE HUNDRED CASES.

DR. M. M. JOHNSON, of Hartford, Conn., detailed the method which he has employed in the performance of this operation. He strongly advised as little manipulation as possible of the intestines. In chronic recurring cases he makes an incision one and one half inches long directly over the appendix, and when the peritoneum is reached a catgut suture should be passed through it at the upper angle of the incision so as to prevent its retraction. In order to find the appendix he passes the thumb and index finger through the incision, seizes the colon and draws it through the incision until the appendix is brought into view. When the cecum is surrounded by a pus sac, a perforated and sloughing appendix is usually found, and should be removed. It should be a fixed rule never to close up the incision without first removing the appendix.

In the treatment of the stump the method employed should be the same as that used in closing an intestinal ulcer. The peritoneum should be sutured by a continuous catgut suture. The transversalis fascia, transversalis muscle and the internal oblique aponeurosis should be secured separately by continuous sutures. Finally, the skin having been put upon the stretch by tenacula placed at the angles of the wound, it should be united with fine catgut. The author has never had a case of hernia follow this method of closing the incision. Catgut which has been carefully sterilized is used throughout the entire operation. Of the 100 operations performed by Dr. Johnson, 98 recovered and 2 died. Of these cases 64 were males and 36 were females.

DR. PARKER, of New Orleans, the Secretary of the Section, DR. CARPENTER, of Kentucky, Drs.

MCRÆ and A. H. FERGUSON, and DR. HAINES, of Omaha, discussed this paper.

DR. J. G. CARPENTER, of Stanford, Ky., read a paper on

#### WHO WAS THE FIRST TO ILLUMINATE THE SIGMOID CAVITY?

The author made a few remarks on his method of illumination, which he had employed for a number of years, and drew diagrams of the instruments used.

#### GASTROSTOMY FOR STRICTURE OF THE ESOPHAGUS, BY THE SBANI-JEW FRANK METHOD.

DR. HUNTER P. COOPER, of Atlanta, Ga., exhibited a patient upon whom he had performed gastrostomy. The patient by mistake a year previous took a swallow of pure nitric acid. Corrosion of the entire mouth, lips and esophagus resulted. The lips and mouth healed about three weeks after the slough separated. Dr. Cooper first saw the patient in January, 1896, several months after increased difficulty in swallowing had appeared. Liquids could be swallowed slowly and with difficulty, half an hour being occupied in drinking a glass of milk. For two or three days at a time swallowing was impossible until relaxation would occur.

An examination of the esophagus revealed three strictures seven, seven and a half and eight inches from the edge of the incisor teeth. No more were discovered until the instrument had passed thirteen and a half inches down the esophagus, when an obstruction was met which would not allow any instrument to pass. The largest instrument that would pass the stricture seven inches from the teeth was of the size of a No. 22 French urethral bougie, and nothing could pass lower than thirteen inches and a half. Gastrostomy was therefore decided upon. An incision was made about a finger's breadth below the costal cartilages on the left side over the stomach. The first incision, three and one-half inches in length, passed down to the muscles, which were then divided in the direction of their fibres by blunt dissection. The peritoneum was opened in a line parallel with the edges of the costal cartilages; the stomach, having been withdrawn from the wound, was pulled outward by a ligature passed through its walls, and traction was made on this ligature until a cone of the stomach three or four inches long was drawn out of the abdominal incision. While the stomach was held in this position the base of the cone was sutured to the parietal peritoneum all the way around. The next step in the operation consisted in making an incision through the skin, superficial fascia and areolar tissue down to the deep fascia. This incision should be placed one inch above the margin of the costal cartilages, and its direction parallel to that of the primary incision. By blunt dissection a communication is established underneath the skin and superficial tissues between this incision and the primary incision, the apex of the cone being pulled through the communication established. The wall of the stomach is then sutured to the skin and the stomach opened. The primary wound is then closed, the muscles being sutured layer by layer and the skin incision sutured last. The advantage of this plan of operation is that it brings the stomach through the abdominal wall in an oblique direction, and a part of the stomach is included between the edge of the costal cartilage and the skin, forming, as it were, a par-

tial valve. This valve prevents leakage of the contents of the stomach during digestion, and is a great advantage over the old method of establishing a direct communication between the stomach and the abdominal incision.

The subsequent history of the case was uneventful. The patient gained in flesh and strength and was perfectly nourished by means of food introduced through the artificial opening. The valve does its work very well, and there is practically no leakage at all.

#### THE ABORTION OF GONORRHEA AND THE TREATMENT OF OTHER URETHRAL AND VESICAL DISEASES BY HYDROSTATIC IRRIGATIONS.

DR. FERDINAND C. VALENTINE, of New York, submitted some modifications to his usual apparatus for performing hydrostatic irrigation, intended to facilitate the employment of his method and add to its efficiency. The apparatus of the author has been fully explained in a paper entitled "The Technique of Urethral and Intravesical Irrigations," which was published in the *Clinical Recorder* for February, 1896. Of the cases which he has observed from the beginning of the discharge in which gonococci were present, every one entirely recovered within thirty-six hours. Of those cases in which the discharge had grown distinctly purulent, when uncomplicated all had recovered within ten days. Chronic cases which had lasted for months and years recovered in varying lengths of time. The method of treatment employed is as follows:

After the discharge ceases the patient is not treated for a week or ten days, when, no discharge reappearing, he is ordered to drink at least twice the quantity of beer to which he is accustomed. No discharge resulting after another lapse of ten days, he is given a strong, irritating injection of nitrate of silver. If the resultant discharge, which lasts from eight to thirty-six hours, contains no gonococci all restrictions are removed.

The author follows Oberlander's method of treating gonorrhea with the addition of irrigation. By its employment he has found that (1) the disease is cut short, (2) the pain is stopped, (3) no complications ensue, (4) no uncertain hand injections are used, (5) no drugs are given by the stomach, and (6) the patient cannot peddle prescriptions. More complete cures have resulted from it than from any other method.

#### THE TREATMENT OF CANCER OF THE RECTUM,

by DR. LEWIS H. ADLER, JR., of Philadelphia.

The author stated that the four recognized operations for this affection were extirpation, colotomy, posterior linear proctotomy and curettage. The ideal method is the extirpation method, but unfortunately it is not often that the rectal neoplasm is discovered in time to permit of the entire removal of the growth and of all glandular involvement. Colotomy is quite practicable in a large number of instances, and the benefits derived from its performance were minutely described by Dr. Chas. B. Kelsey, in the *New York Medical Journal* for November, 1892.

The author described at some length a case in which he had performed the operation of inguinal colotomy and secured excellent results, although at the present time (three years since the operation) the patient has suffered considerable distress from pain over the sacrum, and has not been able to work.

Dr. Adler has never attempted to relieve malignant

trouble affecting the rectum by means of a linear proctotomy, but has found it an excellent plan of treatment when combined with the subsequent use of bougies, in benign stricture. He called particular attention to the value of curettage in those cases of cancer in which the disease is within the lower three inches of the rectum, and its character of such a nature as to permit of its more or less complete removal by the curette. In certain cases the combined operations of colotomy and curettage afford the patient more relief than where one or the other procedure is individually adopted. At the present time all that can be offered patients under any plan of treatment in the majority of cases is temporary relief. Of seven cases of curettement of the rectum for the relief of malignant trouble, performed during the past few years, only one was deemed unsatisfactory. In this case, after the curettement, the patient was unable to leave her bed, her appetite failed, emaciation followed and death from exhaustion ensued in a little over two months. Even in this case, which for several reasons was a most unfavorable one for operation, the patient was much relieved of pain, and the two months she lived were certainly passed with more comfort than would have been the case had no operative interference been attempted.

Dr. Adler described a case in which he had performed the operation of curettement and secured such excellent results that, four months after the operation, the patient was in such good health that he married. His gain in flesh was very marked. A short time after his marriage the growth in the rectum was noticed returning, and the discharge reappeared. Other symptoms developing, he was subjected six months after to a similar operation. A month later marked tympanitis suddenly appeared, and the patient was unable to pass either wind or feces. Various laxatives were employed and several enemas administered before the bowels were made to move, which was not until the third day. Finally the patient became confined to his bed through sheer weakness, and death occurred from exhaustion about nineteen months from the time I first saw him. The autopsy revealed cancerous involvement of the liver and intestines.

In conclusion the author summarized the indications for the operative treatment of rectal cases as follows:

**Extirpation**, to be considered only in those cases in which the disease admits of the hope of obtaining a permanent cure.

**Colotomy**, when the rectum is involved above the lower three inches of the bowel and the disease has produced an appreciable obstruction.

**Curettage** or a *posterior linear proctotomy*, or the two combined, for those cases in which the disease occupies the lower three inches of the rectum.

#### SURGICAL STERILIZATION AND STERILIZERS IN PRIVATE PRACTICE,

by DR. EDWARD BOECKMANN, St. Paul, Minn.

He referred to his address before the Association of Military Surgeons of the United States on "Asepsis in Military Service," which appeared in the *Journal of the American Medical Association*, January 25 and February 1, 1896. He strongly recommends a warm solution of lysol (120° F., and one to two per cent. strong), for combined mechanical and chemical disinfection of the operator's hands and the patient's skin. Provided with lysol, absolute alcohol and ethereal solution of sterilized lanoline, we are enabled to disin-

fect the skin, the most dreaded bearer of infection, as safely, I imagine, as is possible at this time, and with as few and simple agents as can be demanded in operations in private practice.

All sterilizers for steam must necessarily be constructed for over-steam. Dr. Boeckmann does not favor combination sterilizers, because boiling and steaming are different processes, requiring an unequal time and this entails the practical disadvantage that instruments for which boiling is our method of choice, suffer unnecessarily in the prolonged steaming process. This he avoids by the use of a combination portable sterilizer, consisting of four parts: the boiling-pan, the hood, the instrument-tray, and the steam-chamber. The boiling-pan is filled with a sufficient quantity of water, care being taken to fill the groove at the same time; the hood is adjusted; and the whole placed over a good fire. While the water is heating, the instruments are arranged on the tray, and the dressings, etc. (previously washed) in the steam-chamber; needles, drainage-tubes, ligating and suturing materials are put (separately) in a small metal box (sterile catgut is brought along in hermetically sealed envelopes). When the water boils, the hood is removed, the steam-chamber put in, whereupon the hood is replaced with a cork in the upper tube. The steam will now ascend between the hood and the steam-chamber to the top; the cork at the top and the water in the groove and the pan acting as locks, the steam is forced to work its way through the opening in the cover of the steam-chamber into this, through the articles contained, and out through the tube in the boiling-pan. In the course of five minutes the instruments are surgically sterile.

Dr. Boeckmann urged all surgeons to consider every wound at the end of an operation of some duration as slightly infected, and therefore to combine their asepsis with a judicial antiseptics. Thus, he is in the habit of repeatedly dipping his hands in a weak, sterile solution of lysol (one-half per cent., or even less); this small amount of antiseptic he has yet failed to find objectionable, and he uses lysol because it is at hand and because it is alkaline. When the operation is completed he applies next to the wound an antiseptic dressing, not exactly the customary iodoform gauze, because its preparation requires unusual facilities, but anhydrous lanoline, first sterilized, mixed while cooling with two-per-cent. lysol, and run into sterilized tubes, this being first expressed over the wound, whereafter the ordinary dressing is applied.

#### EIGHT CASES OF LAMINECTOMY,

by JOHN A. WYETH.

After a detailed description of each of the eleven cases of injury to the spinal cord which have come under the personal observation of the author in recent years, he briefly summarized the cases as follows:

In Case 2 there was compression of the cord, with paraplegia due to the presence of a tubercular neoplasm. This paraplegia had existed a little over six months. After the removal of the tumor the functions of the cord were restored. While the conductive power of motion and sensation was suspended for six months, the ascending and descending degeneration of the cord evidently took place in so slight a degree that the conductivity of the cord was restored after the removal of the source of compression.

In Cases 3 and 4 there were no external evidences of fracture; and while extra-dural hemorrhage oc-



curred in both cases from rupture of the *venæ basis vertebræ*, there was no direct compression from displaced bone. In all the other cases either a projection or depression of bone pointed directly to the seat of injury. In both of these cases the cord was very much reduced in size at the point at which the dura was incised, and was paler and more anemic than the others. The paraplegia and the ultimately fatal result in both was due either to traumatic pachymeningitis or to general concussion and myelitis resulting in degeneration of the cord. Both of these cases were injured by falling directly upon the back.

Of the eleven cases of fracture of the *vertebræ* only two were due to direct violence; one of which was a gunshot injury, and the other the result of impact of a heavy stone. Two cases were in all probability caused by *contre coup*. The remaining cases were due either to falls from a height, diving or blows upon the back of the head.

As to the results of treatment: Three were not operated upon. Of these one was greatly improved by extension and counter-extension, as the fracture occurred in the dorso-lumbar region where this plan of treatment can be satisfactorily carried out. The same treatment was undertaken in the other two cases, but with no improvement in their condition. Both are living, but their condition is decidedly hopeless.

Of the eight cases operated upon, one was entirely cured (after the removal of a tubercular tumor); another (a young man who was thrown in front of a locomotive) was greatly benefited by the operation, as he is still living and able to get about with a cane and crutch. In the latter case the operation was performed eight months after the receipt of the injury. The other cases were not benefited in any way by the operation. Of the eight operative cases one died six days after operation, and his death may have been hastened somewhat by the interference, but, on the other hand, destruction of the spinal cord at the level of the fifth cervical vertebra could not have continued without interference with the roots of the phrenic nerve. In none of the other cases could a fatal result be charged in any way to the operation. The operation of laminectomy involves so slight a risk to life that the surgeon should be encouraged to resort to this method of exploration in all cases in which the symptoms point to compression of the cord. Great depression of the pulse, respiration or temperature may be taken as a contraindication to the operation. In one of the above cases, however, the temperature was as low as 91° F., and it did not go above 96° in twenty-four hours.

The method of operating which Dr. Wyeth employs is as follows: With the patient in the prone position, reclining somewhat upon one side in order to interfere as little as possible with the movements of respiration, an incision is made with its centre corresponding to the seat of the lesion seven or eight inches in length directly over the spinous processes. Strong hooks are used as retractors which also assist in controlling the hemorrhage. The attachments of the muscles should be cut or scraped from the bones in order to avoid wounding any vessels. In this way the *laminæ* are finally exposed, and with a small rongeur divided and removed one after another until the dura is sufficiently exposed. Oozing of blood may be controlled by pressure with sterile gauze. After the wound is entirely dry the dura is opened by a sharp-pointed knife in the

middle line. Through this primary puncture a grooved director should be introduced, and the dura divided exactly in the middle line as far as necessary. When the fluid escapes, the edges of the dura can be held apart by mouse-toothed forceps and the cord inspected. A light probe should be passed up and down from the point of opening to determine if any compression of the cord exists at those points. The dura should then be closed by fine interrupted catgut sutures about three-sixteenths of an inch apart and the muscles of the two sides stitched together with strong catgut sutures. Silkworm-gut sutures are used for the skin. It is always wise to leave a twist of catgut projecting from the level of the dura at the inferior angle of the wound as some oozing is apt to occur which might exercise compression on the cord. Most careful asepsis should be practised. The patient should remain upon the back for the first week or ten days after the operation. The wound should be dressed about the fourth or fifth day. Patients seem to suffer no material inconvenience from the removal of the *laminæ* of two or three *vertebræ*.

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(Concluded from No. 6, p. 146.)

#### SECOND DAY.

DOES ADDITIONAL EXPERIENCE SHOW THAT CASTRATION IS A CURATIVE REMEDY IN THE TREATMENT OF HYPERTROPHY OF THE PROSTATE GLAND?

by DR. ARTHUR T. CABOT, of Boston.

Dr. Cabot dwelt at great length upon the operations of castration and prostatectomy, and gave many statistics from various sources bearing upon this subject. After considering the relative merit of each operation, he closed his paper with the following conclusions:

(1) In the matter of mortality the operation of prostatectomy has a slight advantage over castration. It seems probable that with later statistics, reflecting the last improvements in the technique of prostatectomy, this advantage would be further increased.

(2) Prostatectomy has the further advantage that it allows of a thorough examination of the bladder and of the discovery and correction of other conditions not before suspected. Stones are frequently removed in this way without adding to the gravity of the operation. In several reported cases of castration the absence of improvement has led to the subsequent discovery of stones which have required other operations for their removal.

(3) Prostatectomy has, on the other hand, the disadvantage that it confines the patient for a longer time, and that it is sometimes followed by a fistula. This occurred in one of the 42 cases used in this paper.

(4) It is too early to know whether any permanent loss of vigor follows castration when done on old men. The nervous effects which sometimes immediately follow the operation suggest a suspicion that with the testes the system may lose some tonic effect exerted by those organs.

(5) The functional results of the two operations seem at present to be as nearly equal as possible, and the tendency to relapse shows itself in about the same proportion of cases after either operation.

(6) The reduction in the size of the prostate after



castration is largely due to a diminution of congestion. Later a degeneration and absorption of considerable portions of the gland may occur. The glandular elements are particularly affected by this atrophy.

(7) Castration would seem to be especially efficacious in cases of large, tense prostates when the obstruction is due to pressure of the lateral lobes upon the urethra.

(8) Castration is of but little use in myomatous and fibrous prostates.

(9) Prostatectomy has its especial field in the treatment of obstructing projections which act in a valvular way to close the urethra. There is, however, no form of prostatic obstruction which a skilful operator may not correct by prostatectomy.

(10) Prostatectomy is then applicable to more cases than castration, and is especially to be selected when an inflamed condition of the bladder makes drainage desirable.

DR. J. EWING MEARS, of Philadelphia, in discussing Dr. Cabot's paper, said he was very much struck with the mortality shown from the different operations. He also stated that he was sorry to learn that no one had any information to offer concerning an operation suggested by himself as a substitute for castration, namely, ligature of the vas deferens.

DR. CHAS. B. NANCY, of Ann Arbor, continuing this discussion, said that as a result of his work with the operation of castration, he had been converted from a rather doubtful attitude towards the operation to a desire and willingness to do it again. He gave at some length the details of the case operated on by himself, which did very well after the operation, but the patient died in five or six weeks from an infection of his wound.

DR. L. S. PILCHER said that from the statistics mentioned in Dr. Cabot's paper, it would seem that prostatectomy had a slight advantage over castration, not only in its results, but also by affording opportunity to secure relief from other urinary complications at the time of operation. In his own hands, however, all prostatectomy operations had been failures, but he considered that if the opinions of other surgeons could be ascertained it could probably be found that a much larger proportion of fatal results really occurred than the figures mentioned by Dr. Cabot showed. In the opinion of the speaker, the operation of prostatectomy has only been resorted to in cases of men who manifested considerable vigor, while, on the other hand, castration has been performed in cases that were already extremely feeble, and could not stand a more serious operation, and frequently by surgeons who were not particularly expert in genito-urinary work. In this way Dr. Pilcher accounted for the large mortality shown by Dr. Cabot.

DR. J. MCFADDEN GASTON spoke of a method of treatment that had recently been brought to his notice by a gentleman whose name he would not mention, the principle of which method was to endeavor to reduce the size of the prostate by the employment of prostatic extracts in a somewhat similar way to the methods now employed with the thyroid extract.

DR. ROSWELL PARK mentioned two cases of castration performed by himself in which the subsidence in the volume of the prostate gland was remarkably rapid and complete. In his opinion there could not be a simpler or easier operation.

DR. ROBERT ABBE spoke of one case in which he

had removed both testicles under cocaine, with the result that the prostate was reduced more than one-half its size. He compared the operation of castration to that of removal of the ovaries.

DR. CABOT closed the discussion, and said he considered the most important question was not the ability of the operator, but the selection of the proper cases for the operation of castration. If a proper selection was made, he believed the mortality would be greatly reduced.

#### THE AMBULATORY TREATMENT OF FRACTURES OF THE LOWER EXTREMITIES,

by DR. LOUIS S. PILCHER of Brooklyn.

Dr. Pilcher mentioned a large number of cases of fracture in which the ambulatory treatment had been employed, and illustrated his paper with a diagram of the apparatus employed. He described in detail the manner of applying the plaster bandage so as to form a sufficiently rigid and protecting case, and also explained the splints used in this method of treatment. He stated that the number of cases of fracture of the leg treated by himself up to the present time with the ambulatory dressing was twenty, and the results that have followed this treatment in these cases have been very satisfactory. The time after the injury when it may be proper to apply the ambulatory dressing depends upon the nature and extent of the damage to the soft parts, and the amount of local reaction following the injury.

This paper was discussed by DR. JOHN E. OWENS, of Chicago, who stated that cases of fracture of the lower extremity treated by this remedy might be divided into two classes: first, those that walk with the aid of crutches, but bear little or no weight upon the affected limb; and second, those that walk on the affected leg, with or without crutch or pain.

After describing at some length his method of applying the dressings, demonstrating the apparatus in position and referring to cases in which he has used it, Dr. Owens concluded as follows:—

(1) That the main object in the treatment is to enable the patient in a few days to get up and walk about on the fractured leg.

(2) That union is accelerated in many cases; comfort, appetite, digestion and sleep secured; swelling, muscular atrophy, pneumonia and delirium tremens prevented, and flexion and extension maintained.

(3) That in the application of the dressing the foot is maintained at a right angle to the leg, and extension maintained until the deformity is corrected and the legs are of even length.

(4) That the material usually employed is plaster of Paris, in which wooden or metal strips may be included, there being a very thick plaster sole, separated from the foot by a layer of cotton about five centimetres thick, the plaster being carefully moulded with the hand, so as to fit snugly against the upper end of the tibia and about the dorsum and ankle.

(5) It is generally thought best not to apply the dressing until the second or third day after the accident.

(6) The patient must remain under observation in order that any displacement, undue constriction or other defect may be noted.

(7) In fractures of the thigh a combination of plaster of Paris and glue is recommended by some, while others have used special splints.

(8) The plaster may be made to include the pelvis.

(9) The dressing may be applied to the leg, and then allowed to harden, after which the patient's hips are raised from the bed, extension being made to correct displacement, and the remainder of the dressing applied.

(10) An important feature of the dressing is its strong reinforcement and close application at the upper and back part of the thigh, thus securing a firm bearing against the ischium and perineum.

(11) That the sooner the immobilization is effected, the less will be the swelling.

(12) That the method can be applied with great satisfaction, and that an exact fit must be secured.

After various remarks on the subject, *pro* and *con*, DR. OWENS closed the discussion on his paper by stating that he was already on record as having condemned the method, and he merely brought it forward to-day as being of some value in certain cases.

DR. PILCHER closed the discussion on his paper by stating that although he was aware that the method was a dangerous one, and should only be employed by men skilled in surgical appliances and surgical materials, yet the good results he had obtained in many cases warranted him in considering it as a good method with which to be familiar.

#### THE TREATMENT OF TRAUMATIC LESIONS OF THE KIDNEY,

by DR. W. W. KEEN, of Philadelphia.

AFTER reading a tabulated list of 163 published cases of renal traumatism since 1878, the author stated that the traumatic lesions have, as a rule, two advantages over the lesions of disease: (1) being apt to be unilateral, the other kidney is not injured; and (2) the injured kidney is apt to be healthy or fairly so. Gunshot wounds, on the contrary, have two disadvantages: (1) that the treatment of the kidney alone in many cases cannot be solely considered; and (2) if the renal substance is only moderately injured, no one would be willing to do primary nephrectomy.

As to the treatment of gunshot wounds, they may be divided into (1) those involving only the renal substance, (2) those involving the pelvis, (3) those involving the vessels, and (4) those involving the ureter. The incision in most cases should be abdominal, either median or at the outer border of the rectus; and if the vessels are badly torn so that there has not only been a great deal of hemorrhage but the integrity of the organ is threatened, nephrectomy should be performed.

In treating the extravasated blood in case the kidney is not removed, if the bleeding is into the peritoneal cavity the blood must be removed by abdominal section, but if the blood accumulates in the peri-nephritic tissues alone it may be left undisturbed.

Referring to wounds of the kidney other than gunshot, (1) only one kidney is usually involved, (2) the other kidney is usually healthy, (3) no foreign bodies are apt to be carried in as they are in gunshot, and (4) other organs are usually not involved.

In treating the kidney, if the wound is sufficiently large for it to prolapse, it should be sutured and replaced if its condition is suitable, and the same procedure may be carried out if the pelvis of the kidney is opened. A partial nephrectomy would be advisable if a portion of the kidney is so far severed that its future integrity is threatened, and the fragment removed.

Although in most cases of rupture of the kidney but one kidney is affected, occasionally the other kidney ceases to act and anuria results, usually being fatal, while cases are on record where patients have necessarily died after nephrectomy. Rupture is usually transverse to the curved long axis of the kidney and only very rarely longitudinal. If the capsule is not torn, the hemorrhage is not apt to be very great, but whether or not the peritoneum is torn is a much more important question, as if it is, both blood and urine will escape into the peritoneal cavity.

As the dangers of rupture of the kidney are primary and secondary, the treatment may be conveniently so divided. Usually it must be decided if a nephrectomy shall be done within the first few days or even hours, but it may occasionally be postponed and become a secondary operation, when the lumbar route will be best.

Of 116 cases of rupture of the kidney reported, 66 recovered. Secondary nephrectomy is nearly twice as fatal as primary.

#### ON SUSCEPTIBILITY AND IMMUNITY, WITH SPECIAL REFERENCE TO SURGICAL CASES,

by DR. ROSWELL PARK, of Buffalo.

Dr. Park divided this subject into three classes: (a) local and general; (b) congenital or acquired, and (c) absolute and relative. Man seems to be immune from numerous infections, which are common to many of the domestic animals, for instance, hog cholera, symptomatic anthrax and chicken cholera, while he is, in common with them, susceptible to the infection of anthrax, glanders, tuberculosis and actinomycosis. Then, too, men differ very much among themselves in susceptibility to the same disease; and of course, we explain this, so far as mere words can, by saying that at the time of exposure their bodies were not receptive or were resistant. Susceptibility seems to be inseparable from a study of the causes which favor infection, which should be considered in the following order: (1) the virulence of the infecting organisms and the amount introduced, (2) association, (3) hereditary influences, (4) local predisposition, (5) vestiges and disappearing organs and tissues, (6) pre-existing disease, (7) personal habits and environment, and (8) fetal infection.

Immunity may also be (a) local or constitutional and (b) congenital or acquired, and acquired immunity may be natural or artificial. Immunity is, in some sense, a racial characteristic, as for example, in the case of the Japanese, who, it is said, never have scarlet fever, but are more susceptible to beriberi than are Europeans, while the negroes escape yellow fever and are less liable to malaria and dysentery than are Europeans. Acquired immunity is not necessarily a matter of juggling with bacteria of the disease in question, but may be produced by the employment of others.

In a general way it may be said that the conditions which afford protection, so far as they are controllable by the surgeon, are those which tend to increase what, for lack of better knowledge, we must call vital resistance, and to decrease vulnerability.

In closing the author said: The conclusions of surgical importance which may be legitimately reached from the study of the conditions dealt with in this paper are essentially these: that the surgeon in emergency cases has to do the best he can, not merely with the means at hand, but with the tissues at hand; and

here so long as he can control what may happen outside of the body, he has done his full moral and legal duty. On the other hand, in any case where patients deliberately come under observation, and where time may be afforded, it is the surgeon's bounden duty, bearing in mind a summary of the conditions which notoriously conspire, upon the one hand, to lower vulnerability, upon the other hand, to afford protection, to so order the habits, the diet, the surroundings and the preparation of his patient as to restore his tissues and vital fluids, so far as possible, to their normal condition, before he interferes with their functions by an operation.

A distinct and as yet an unworked field lies before him who will study carefully and for sufficient length of time the effect of anesthetics in increasing susceptibility and infection. This is a problem which must be worked out rather upon human patients than upon animals, since the conditions are so exceedingly different, most of the animals used for experiment being too relatively susceptible, dogs notoriously so. I have for years cherished the opinion that anesthetics affect all people to a greater or less degree in this direction; yet I am not able to present to you any definite statistics or statements. Loss of blood is certainly a factor lowering vitality; and in that complex condition of shock it must assuredly be that natural immunity is at least temporarily lowered. Equally important in my estimation are the auto-intoxications and toxemias, of which two particularly call for mention here. The effect of sugar in the urine, or rather, the effect of the condition which leads to its presence, is everywhere recognized; but I am more and more convinced that in the body condition which is most easily recognized by hyperacidity of urine, and which is so often a complication of uricacidemia, oxaluria, etc., we have a grave and sometimes insuperable obstacle to ideal success after operating. The other condition to which I particularly allude is that which I usually speak of as intestinal toxemia, and relates to auto-intoxication produced by absorption from the contents of the alimentary canal of substances which ought not to be therein retained, nor allowed to so accumulate nor undergo chemical changes which shall permit such absorption. This condition is in a large measure represented by chronic constipation; and yet it certainly does occur in patients who have a regular daily habit of alvine evacuation. It is to be recognized by the hue of the skin, by the appearance of the tongue, often by the presence of indol or indican and ethereal sulphates in the urine, and quite often by the diminished elimination of the fluid and mineral elements of the urine. It should be combated, if possible, by a careful course of hot-air or Turkish baths, copious draughts of fluid, the administration of saline laxatives and of intestinal antiseptics, among which, in my estimation, the very best is a solution of mercury and arsenic in hydrochloric acid (given in the shape of mercuric chloride, dissolved in dilute muriatic or nitro-muriatic acid, with the addition of liquor arseniosi chloridi). I have tried a great variety of the vaunted intestinal antiseptics, but have settled upon the conviction that some such mixture as this gives results far superior to any which can be obtained from salol, naphthaline, etc. If, in conjunction with these measures, we resort to exercise, when it can be taken, to sunlight, which is always available, and perhaps to massage, by which circulation is quickened and equalized, excretion hast-

ened and waste material dislodged and taken out of the system, we have done what we can to prevent infection.

And I have, furthermore, for years contended that since the inauguration of the so-called antiseptic era and in our enthusiasm for combating infection from without, we have lost sight of a most important truth, which we cannot afford to disregard, namely, that in our enthusiasm for combating infection from without we have almost neglected the measures for, first, the recognition and, second, the successful prevention of infection from within. Certain it is that in the majority of instances the latter, (that is, infection from within) is much the more liable to ensue, and particularly in a class of cases where one is tempted, for one reason or another, to be less careful than he ought to be. I would give, then, this most important practical conclusion to my remarks, that only he who weighs judiciously the possibility or the imminent probability of one or the other of these forms of infection is really capable of guarding against both of them, and that the best surgeon is he who will always take time, when it can be afforded, for the preparation of his patient for operation. In other words, I would remind you of Sir James Paget's too often neglected statement, that we ought to examine patients for operation with fully as much care as we do for life insurance, and add to it that if this examination be so conducted we shall often find that which will make us hesitate and prepare them before subjecting them to the enhanced risk of what may, in other respects, seem for their good.

#### THIRD DAY.

THE EFFECT OF ANESTHESIA UPON THE TEMPERATURE, by DR. DUDLEY P. ALLEN, of Cleveland.

Dr. Allen dwelt very fully on the results obtained from a large number of experiments, principally upon dogs, and gave the details of each observation.

DR. PARK, representing the Committee on the Nomenclature of Tumors, presented a printed report showing the method of classifying tumors suggested by the Committee.

DR. J. MCFADDEN GASTON, of Atlanta, demonstrated upon the cadaver an improved method of exploring the thoracic cavity.

DR. H. S. WEEKS presented his report as a delegate to the British Medical Association in 1895, which was commented on by Dr. Nancrede.

RETENTION FROM BENDING AND VALVE FORMATION (OBLIQUE INSERTION) IN THE BILIARY TRACT,

by DR. CHRISTIAN FENGER.

Dr. Fenger demonstrated, by morbid specimens and diagrams, his method of treating this affection, which was favorably commented upon by Drs. MIXTER and TIFFANY.

AN UNUSUALLY LARGE PERIOSTEAL SARCOMA OF THE THIGH SUCCESSFULLY TREATED BY EXTIRPATION,

by DR. JOSEPH RANSOHOFF, of Cincinnati.

This paper was discussed by DR. DANDRIDGE and DR. GASTON, who mentioned cases somewhat similar to that of Dr. Ransohoff.

Dr. J. Collins Warren of Boston was elected President for the ensuing year; and it was decided to meet in Washington in 1897.

THE BOSTON  
Medical and Surgical Journal.

THURSDAY, AUGUST 13, 1896.

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THE WEATHER.

"HEAT, Ma'am! it was so dreadful here that I found there was nothing left for it but to take off my flesh and sit in my bones." Poor, dear, delightful Sidney Smith has been freely quoted or plagiarized during the last week — for how many of us have had clear cerebration enough to really place such comments in their rightful guise? But would the rector of Foston-le-Clay have really been any more comfortable in that time had he been able to preach to his people with no more clothing than one of his sculptured reapers on a slaty church-yard slab? In the words of the *Edinburgh Review*, "We opine not." For truly, difficult as opining, whether in the negative or affirmative, is in such weather as we have been given during the last week, it is not made easier by thrashing about in restless attempts to escape it. Probably they suffer most who have nothing else to do but suffer.

The avoidance of unnecessary labor, and there is a great deal of that in every one's daily life, the contentment with a moderate amount of so-called cooling drinks, and a simple diet, go far to assuaging the discomforts supplied by nature. This volitional disregard of heat oppression applies to the adult readers of these remarks, if there be any — not to the poor suffering babies whose parents will still persist in keeping them twice or three times too heavily clad. We have as a neighbor one who commands both our blushes and our encomiums, for the red-headed scion of that family disports his eighteen months' growth with the adornments of nature unmarred by man. We children of an older growth are unhappily debarred from such hygienic manner of living, but it would save much mortality if more babies were allowed to go unclad during these hot days.

We have been making a careful study of the causes of such intemperate days; beginning with the very source of it all and the firm belief that "heat is not a thing in itself, but simply the energy of the molecu-

lar motion of any material substance," but by the time we had reached the full understanding of the inversions of temperature gradients in precyclonic winds, the molecular motion of our material body became so great that heat was the only condition and substance at all, and we refrained from further hoping to help ourselves or our readers by thought, remembering Bolingbroke's words:

"Oh, who can hold a fire in his hand,  
By thinking on the frosty Caucasus?

Oh, no! the apprehension of the good  
Gives but the greater feeling to the worse."

THE TREATMENT OF GUNSHOT WOUNDS OF  
THE KIDNEY.

KEEN<sup>1</sup> publishes an exhaustive statistical study of the treatment of traumatic lesions of the kidney based upon a complete collection of the 155 cases of traumatism of the kidney which have been published since 1878. This time is taken as marking fairly well the period at which modern antiseptic surgery was generally practised. His cases are grouped in five classes:

- (1) Gunshot wounds of the kidney.
- (2) Wounds of the kidney other than gunshot.
- (3) Subcutaneous rupture of the kidney.
- (4) Rupture of the ureter.
- (5) Traumatic hydronephrosis.

In the first class, gunshot wounds of the kidney, which alone we purpose to consider, there are nineteen cases, of which ten recovered and nine died. In five of the nineteen cases nephrectomy was done, and four of the five died. This high mortality is, however, as our author points out, deceptive, as is shown by detailed examination. In one the fatal result was independent of the nephrectomy; in another hemorrhage had already doomed the man; another died from suppuration in the other kidney; and the fourth died from nephritis in the other kidney.

In the five dying without nephrectomy, three died of peritonitis and two of hemorrhage.

Of the ten which recovered four are important as being complicated with other injuries, such as perforation of the intestines, injury of the spleen and liver, and intra-abdominal hemorrhage.

The treatment naturally will vary with the extent of the lesion.

For wounds involving merely the renal tissue, simple disinfection and drainage will suffice.

Wounds involving the pelvis or any of the calyces will naturally be complicated by the escape of the urine into the tissues. If it be normal and bland, however, this is not a serious complication, as it is very possible for the wound to escape infection unless other sources exist.

Wounds of the renal vessels will result in hemorrhage, which may, if retro-peritoneal, form a localized perinephritic hematoma, or push its way between the layers of the meso-rectum, or if intra-peritoneal may

<sup>1</sup> Annals of Surgery, August, 1896.

flood the abdominal cavity. The blood may also pass by the ureter into the bladder.

The ureter alone may be divided by the ball. This condition is, however, so rare, that only one certain case is found on record, that of the Archbishop of Paris, who was wounded in the Revolution of 1848. No wound of the ureter alone was recorded in our Civil War.

Cases in which the surgeon has reasonable evidence that the kidney has been wounded, especially if the grave symptoms of a large lumbar hematoma or of intra-peritoneal bleeding are present, require, of course, immediate operative treatment. In cases where the ball enters by the loin, or from in front, and emerges so near that there is reasonable certainty of the kidney alone being injured, the lumbar incision may be chosen. In most cases, however, the probability that other abdominal viscera have been injured is so great, that an abdominal incision should be selected. The first and most important step is, of course, to find out if hemorrhage is going on, and to find and tie the bleeding vessels. If the vessels have been so badly torn that there is danger to the vitality, and later to the secreting power of the kidney, nephrectomy must, of course, be performed. The mortality in these severe cases will be high, not so much on account of the nephrectomy, as of the severe hemorrhage which must have taken place before it is undertaken. Between these severe cases, and the simple injuries which require merely disinfection and drainage, there will naturally be a debatable class, in which reasonable doubt may exist. In these cases experience must decide what is best to be done.

#### MEDICAL NOTES.

**THE MORTALITY FROM THE HEAT.**—Some idea of the terrible effects of the prolonged heat is given by the following figures (necessarily incomplete) of the deaths directly due to the heat in five of our large cities during the past week. The scattered cases in the smaller cities and towns would greatly increase this sad list. New York, 389 deaths; Philadelphia, 92; St. Louis, 100; Chicago, 30; Boston has been fortunate in having so far but 18 fatal cases.

**THE AMERICAN PUBLIC HEALTH ASSOCIATION.**—The local committee appointed for the purpose of entertaining the American Public Health Association at its twenty-fourth annual meeting, which is to be held at Buffalo, N. Y., September 15 to 18, 1896, is arranging for an exhibition of sanitary goods and appliances "as a source of instruction and usefulness to the public as well as of benefit to those engaged in the manufacture and sale of such material."

#### BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—During the week ending at noon, August 12, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease:

diphtheria 58, scarlet fever 11, measles 85, typhoid fever 26.

**DELEGATE TO THE INTERNATIONAL CONGRESS OF GYNECOLOGISTS AND OBSTETRICIANS.**—Dr. William H. Baker, of Boston, has been appointed by the State Department in Washington to represent the United States in the International Congress of Gynecologists and Obstetricians to meet in Geneva in September under the auspices of the Swiss Government.

**A PHYSICIAN KILLED BY LIGHTNING.**—Dr. William L. Pressey, of Bangor, Me., was instantly killed by lightning at Illesboro' on August 10th.

**ONE HUNDRED AND TWO YEARS OLD.**—Mrs. Sally Batchelder, of Peabody, Mass., celebrated her one hundred and second birthday on August 8th.

**THE FLOATING HOSPITAL.**—The Boston Floating Hospital during last month made six trips down the harbor; 562 sick babies were cared for and 182 well children, who could not be left alone by the mothers, of whom there were 526.

**SUMMER SCHOOL OF PHYSICAL TRAINING.**—The closing exercises of the Harvard Summer School of Physical Training was held in the Hemenway Gymnasium Friday evening, August 7th.

#### NEW YORK.

**MORTALITY OF THE CITY.**—President Wilson, of the Board of Health, has transmitted to the mayor a communication showing the number of deaths from diarrheal diseases and from all causes, and the death-rate during the month of July for the present and four preceding years. It will be seen that there has been a marked decrease in the mortality of the city, which is actual and not merely relative, notwithstanding the increase in the population.

	All Causes.	Diarrheal Dis.
	Dths. Rate.	Dths. Rate.
1892 . . . . .	5,453 38.37	1,635 11.49
1893 . . . . .	4,704 32.09	1,383 9.44
1894 . . . . .	4,531 30.05	1,197 7.94
1895 . . . . .	4,481 28.61	1,178 7.52
1896 . . . . .	4,328 29.29	973 6.04

This very satisfactory showing President Wilson attributes to four principal causes, namely, clean streets, increased area of asphalt pavements in the tenement-house districts, improved milk supply, and the increased use of sterilized milk for infants.

**SMALL-POX AND YELLOW FEVER IN CUBA.**—Dr. A. H. Doty, Health Officer of the Port, sailed for Cuba on August 8th. He stated before leaving that he was not satisfied with the obtainable information regarding the reputed outbreak of yellow fever and small-pox in Cuba, and desired to obtain reliable data from headquarters. He expects to make a visit to the small-pox infected region around Santiago if it is possible to cross the island by rail.

**ILLNESS OF DR. W. H. PARK.**—Dr. William H. Park, of the Health Department, the bacteriologist of the laboratory connected with the Willard Parker Hospital for Contagious Diseases, has been laid up at the Presbyterian Hospital with an attack of typhoid

which it is believed he contracted while making experimental investigations with a view to securing an efficient typhoid antitoxin. The latest reports state that, although he has been dangerously ill, he is now rapidly recovering.

**DEATH OF DR. C. H. WEINHOLTZ.** — Dr. Charles H. Weinholz died at his residence in New York on August 7th from an over-dose of morphia, taken accidentally. He had been working very hard at his profession during the hot summer weather and was suffering from nervous exhaustion. It is supposed that he took the morphia to obtain sleep. Dr. Weinholz was fifty-five years of age, and was born in Charleston, S. C. He was graduated from the Medical Department of the University of the City of New York in 1883, and had built up a large practice in what is known as the Yorkville district of the city.

**DEATH OF DR. LAURENCE CORTELYOU.** — Dr. Laurence Cortelyou of Brooklyn, died from the effects of a fall from the third story of his house in that city on August 4th. Last winter he started on a trip around the world and while in San Francisco in January his actions were such as to indicate that his mind had become affected. In consequence, he was brought back to Brooklyn and placed in a private sanitarium. Afterwards he was removed to his own house, where he was attended by a nurse. Dr. Cortelyou belonged to one of the oldest families on Long Island and inherited a large estate from his father, who at one time owned a large part of the region now occupied by Prospect Park in Brooklyn. A historical spot within the reservation of Fort Hamilton, commanding the Narrows on the Long Island side, is the old Cortelyou mansion, on the Shore road, at the east end of the East Battery. This house sheltered Lord Howe when he landed with the British forces on Long Island during the Revolutionary war. Until recently the remains of a cobble road, beginning in the farmyard of the Cortelyou house and running diagonally across the fort reservation, was visible. This was the remains of the old military road built by Lord Howe, over which his cannon and baggage wagons were hauled from the ships of the British fleet in Gravesend Bay to Brooklyn. Dr. Cortelyou was a graduate of Yale College and of the College of Physicians and Surgeons, New York, and for a number of years he practised medicine in his native city. He was fifty-seven years of age and married.

### Miscellany.

#### SURGEON C. S. D. FESSENDEN.

**SUPERVISING SURGEON-GENERAL WYMAN**, of the Marine Hospital Service issues the following notice of the late Surgeon Fessenden:

It is with regret that I have to announce to the medical officers of the Service the death, on July 23d, from a complication of heart and kidney affections, of Surgeon Charles Stewart Davies Fessenden. Surgeon Fessenden was the

senior surgeon of the corps, having served since April 4, 1861 — a period of more than thirty-five years. He was born in Portland, Me., February 23, 1828, and was of a family noted in the annals of his native State and the nation. His father, General Samuel Fessenden, was for many years a leader at the bar of Maine, and his eldest brother, William Pitt Fessenden, was the distinguished senator of that State, and during the administration of President Lincoln became Secretary of the Treasury. Two nephews of Surgeon Fessenden rose to the rank of Brigadier-General during the Civil War, and others have been prominent in private life, two of them in the profession of medicine.

Surgeon Fessenden was fitted for college at the Portland Academy, and in 1844 entered Harvard University, where he pursued his studies for one year; leaving Harvard, he became a student at Bowdoin College, from whence he was graduated in 1848.

He studied medicine under Charles W. Thomas, M.D., of Portland, Me., and attending medical lectures at the Medical School of Maine, and also in New York, was graduated in 1851 from the Medical School of Maine. From 1853 to 1856 he was physician in charge of the Portland City Hospital, after which date he became a private practitioner until his appointment as surgeon in the Marine Hospital Service in 1861.

During the period of his membership in the corps, he served as commanding officer at the ports of Portland, Me., New York, N. Y., St. Louis, Mo., Norfolk, Va., Louisville, Ky., and Mobile, Ala. During this period he was also a member of three boards of medical officers convened for the examination of applicants for the Service, and of eight boards convened for the physical examination of candidates for admission to the Revenue Cutter Service, besides serving on various special details as inspector.

### SUTURE OF THE HEART.

CAPPELEN<sup>1</sup> reports the following case:

A man, aged twenty-four years, had some hours before admission received a stab-wound in the left side. He went home alone, and about one hour afterwards was found lying in a pool of blood. On admission to the hospital he was found unconscious; the pulse could not be felt and no heart impulse could be felt, although heart sounds could be heard to the right of the sternum. In the fourth left intercostal space, in the mid-axillary line, parallel with the rib, was a punctured, non-bleeding wound, about one inch in length. After a camphor injection the patient began to breathe and a pulse could be felt. The left side of the chest did not move on respiration.

Under chloroform narcosis the fourth rib was resected; the pleural cavity was found partially filled with blood and compressing the lung. After evacuating the blood the lung dilated and was found not to have been wounded. On resecting the third rib a wound was found about one inch in length in the pericardium.

The sac was filled with blood, and by enlarging the wound, a wound was found in the left ventricle, about two centimetres in length, from which all the hemorrhage came. The wound was sutured, after which the hemorrhage ceased. The heart was sutured with difficulty on account of the frequent pulsations. The pulse after the operation was very quick and feeble, but improved after a subcutaneous saline injection.

The patient died two and a half days after the operation.

<sup>1</sup> Norsk Magazin for Loegevidenskaben; University Medical Magazine, August, 1896.

At the necropsy it was found that a large branch of the coronary artery had been wounded; the wound had begun to heal, but there was evidence of pericarditis, and various bacteria were found in the fibrinous exudation.

## Correspondence.

### THE DOCTOR A MISSIONARY FOR SOUND MONEY.

BOSTON, August 9, 1896.

MR. EDITOR:—I was interested in reading this week in the JOURNAL the letter from a brother physician in Maine upon the present political crisis. As a rule, I agree with him as to doctors in politics, and think that, like pus in surgery, they had better be kept out. But I was glad to read his letter and learn that the glory of furnishing a financially-solvent vice-presidential candidate had not swept the whole State of Maine into the ranks of the silver party.

This is a campaign for every one, even the country doctor, to speak up out loud in: a campaign, as he says, of honor and dishonor. But it seemed to me his tone was a trifle light, and the present time is one for downright, unmistakable declarations. The people who are clamoring for free silver are dead in earnest, and will not be brought over by scoffing or ridicule. As one of my patients said the other day, "Doctor, the more you jeer at them the better they like it and the madder they get." He was a man whose business and influence among laboring men are large and powerful.

What the conditions in the middle West are—of terrible depression and hopelessly over-mortgaged farms—it is difficult to realize here. It is hardly to be wondered at that they feel like smashing "the whole concern, for it can't go worse." But here with us the conditions are different, and it is here that our individual exertions can do some good. There are a lot of people who are inclined to nibble at the shining bait of fiat-money, and it is often possible to show them the error and ignominy of their course.

Few laymen have a better opportunity for such work than the physicians. In our daily round of calls we have to do a great deal of talking on extra-professional subjects, either with our patients or their families. Every one is now interested in the present political campaign. Indeed, it is long since we have had one so clearly based on principle, and it is a relief to start one's son on his first exercise of franchise this fall upon something more political, in Plato's noble sense of the word, than a personal exchange of insult and innuendo.

Now our patients are very apt to listen with some degree of thought and confidence to what we say, and notably give our profession credit for common-sense, reason and disinterestedness. I find many eager for such exposition of the subject as I can give, and most of them ready for a reasonable influence. I am not a gynecologist, so some of my patients are "all there" and male voters. One of them said this morning, "Doctor, we have all got to work, each one of us, hard, right here in Massachusetts, if we are going to save our credit and our honor." And so I for one feel it is not only right and seemly, but our duty to urge, preach and expound the only honest course for a country as for a man—to pay his honest debts with an honest dollar, to put a firm and immovable opposition to those who say, "We will pay half of our debts and no more." It takes a little longer in the day to finish our round of visits, but our time is spent where no man should begrudge it—in the truest service of his country.

"But, it strikes me 't ain't jest the time  
For stringin' words with settisfaction;  
W'at 's wanted now 's the silent rhyme  
'Twixt upright Will an' downright Action."

Yours truly,

—, M. D.

### A CASE OF PUERPERAL ECLAMPSIA.

WINCHESTER, MASS., August 7, 1896.

MR. EDITOR:—I was engaged in November to attend Mrs. A., a primipara, aged thirty-three. She stated that her term of 280 days would expire on February 7th. She appeared in perfect health, and had seemingly been free from any of the diseases of pregnancy.

Hearing occasionally from friends who met her, that she was well, and being unusually busy, I neglected to call on her, as I intended, until the 29th of January, when I was informed through a friend, who had seen her, that she had edema. An immediate call at her house proved that she had quite a little general edema, but was feeling well, had had no headache, or other symptoms of kidney disease, and her appetite and digestion were good.

An examination of the urine, which she thought was normal in amount, showed about 20 per cent. of albumin. I at once commenced the administration of the infusion of digitalis in good doses, with salines sufficient to keep the bowels active, advised a milk diet, and warned the husband that convulsions might occur.

Three or four days later she was passing three pints of urine in twenty-four hours, and the percentage of albumin was slightly less, although there was no decided change.

On February 6th, I was called up by the husband at three o'clock, who said his wife was vomiting and having severe pain in the region of the stomach. On questioning him, he said she had eaten an orange the previous evening, but had been in the habit of eating them, and without injury before. Thinking it an attack of indigestion, I sent her a bismuth and chalk mixture, with a little morphia added.

Was called to the house at 6 o'clock and found her having quite severe epigastric pain. Gave one-sixth of a grain of morphia hypodermically and continued chalk mixture.

At 8 o'clock, she was not having so much pain, but said her head felt queer, that her vision was impaired, and complained also of dyspnea; symptoms which at the time I was inclined to attribute, in part at least, to the effect of the morphine. There was no headache. On vaginal examination found the os closed, and a vertex presentation.

Saying I would call again in two hours, I then left to attend other calls, but was summoned shortly after 10 o'clock, and found her in convulsions. Ether was at once administered, Dr. B. summoned, and I began manual dilatation of the uterus, which was dilatable and the os patent, indicating that labor had commenced.

On arrival of Dr. B., another hypodermic of one-fourth of a grain of morphia was given, and he agreed that the uterus should be emptied at once. As soon as possible, forceps were applied, and with some difficulty she was delivered of a stillborn male child, of medium size. The placenta was immediately delivered with no more than the usual amount of hemorrhage.

The mother failed rapidly during delivery. The pulse, which was feeble and rapid at the beginning, grew steadily worse, in spite of repeated hypodermic injections of brandy, and she died a few minutes after labor was completed.

Having been freely criticised, both for what was and what was not done for this patient, at the suggestion of the husband, the case is here detailed.

In an experience of some thirteen years of general practice, I had seen many cases of albuminuria of pregnancy, but this was the first case of puerperal eclampsia met with in my own practice. Perhaps this experience, with the absence of headache in this case (the most constant of the prodromal symptoms), and having in mind the well-known cerebral disturbance that a full dose of morphine often produces, may have influenced my perception of the symptoms which preceded the eclamptic attack.

The chief point that this case emphasizes is the necessity of repeated urinary examinations in every case of pregnancy, especially during the last three months.

Medical authorities are so conflicting as to the best treatment of puerperal eclampsia that a discussion of the question in these columns may enlighten many of us.

Very truly yours,

M.



## METEOROLOGICAL RECORD

For the week ending August 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.			Direction of wind.		Velocity of wind.		We'thr. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...26	30.08	74	85	62	59	60	60	W.	S.W.	9	14	C.	O.	.08
M...27	29.90	73	79	67	71	84	78	S.W.	S.W.	12	16	O.	O.	
T...28	29.98	76	81	72	68	69	68	N.	S.	8	9	C.	O.	.14
W...29	30.00	76	85	67	76	86	81	W.	S.W.	5	12	C.	F.	
T...30	29.76	74	84	64	88	88	93	N.E.	E.	5	3	E.	O.	
F...31	29.93	70	78	61	54	34	44	N.W.	N.W.	24	12	C.	O.	
S...1	30.10	67	77	57	42	51	46	W.	S.W.	5	13	C.	F.	

\* O., cloudy; C., clear; F., fair; O., fog; H., hazy; S., smoky; E., rain; T., threaten-  
ing; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 1, 1896.

Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	883	427	29.16	10.44	19.68	.84	4.32	
Chicago	1,678,967	—	—	—	—	—	—	—	
Philadelphia	1,164,000	—	—	—	—	—	—	—	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	494,205	291	155	32.64	9.20	22.22	1.02	2.04	
Baltimore	496,315	238	124	28.98	12.18	24.78	1.26	.84	
Cincinnati	336,000	132	47	10.64	9.12	3.80	3.04	.76	
Cleveland	314,537	115	66	27.28	3.52	22.88	3.82	—	
Washington	275,500	134	59	19.88	12.58	17.76	—	.74	
Pittsburg	238,617	100	51	40.00	4.00	32.00	4.00	1.00	
Milwaukee	265,000	—	—	—	—	—	—	—	
Nashville	87,754	57	15	19.25	15.75	8.75	5.25	—	
Charleston	65,165	51	21	27.44	13.72	23.52	1.96	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	98,687	51	30	39.20	3.92	31.26	—	3.92	
Fall River	88,020	58	44	53.32	3.44	51.60	—	1.72	
Lowell	84,359	48	37	23.68	2.08	23.68	—	—	
Cambridge	51,519	50	32	54.00	6.00	50.00	—	—	
Lynn	62,335	35	17	39.90	5.70	37.05	—	2.85	
New Bedford	55,254	49	23	42.84	2.04	38.78	—	—	
Springfield	51,534	19	11	52.60	5.26	52.60	—	—	
Lawrence	52,153	31	18	41.99	3.23	41.99	—	—	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	23	14	65.26	4.35	65.26	—	—	
Brockton	33,157	12	5	—	—	—	—	—	
Haverhill	30,185	12	5	25.00	8.33	25.00	—	—	
Malden	29,706	16	10	56.25	—	56.25	—	—	
Chelsea	31,295	—	—	—	—	—	—	—	
Fitchburg	26,394	11	8	45.45	—	45.45	—	—	
Newton	27,022	15	6	46.62	13.33	33.33	—	13.33	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	13	6	61.52	7.69	53.73	7.69	—	
Waltham	20,877	12	7	41.66	16.66	25.00	—	—	
Quincy	20,712	—	—	—	—	—	—	—	
Pittsfield	20,447	7	7	85.68	14.28	72.20	—	14.28	
Everett	18,678	10	7	80.00	—	80.00	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,554	8	5	50.00	12.50	50.00	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 2,558: under five years of age 1,283; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 820, diarrheal diseases 663, consumption 233, acute lung diseases 129, diphtheria and croup 56, typhoid fever 33, whooping-cough 26, measles 11, cerebro-spinal meningitis 11, scarlet fever 11, malarial fever 7, erysipelas 2.

From whooping-cough New York 15, Baltimore, Boston, Cleveland and New Bedford 2 each, Lowell, Cambridge and Hyde Park 1 each. From measles New York 7, Pittsburg 2, Baltimore and Cleveland 1 each. From scarlet fever Cincinnati 4, New York 3, Boston 2, Baltimore and Pittsburg 1 each.

From cerebro-spinal meningitis New York 6, Worcester and Waltham 2 each, Baltimore 1. From malarial fever New York and Nashville 3 each, Charleston 1. From erysipelas New York 2.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending July 25th, the death-rate was 24.8. Deaths reported, 5,167; diarrhoea 1,177, measles 155, whooping-cough 115, diphtheria 74, scarlet fever 40, fever 32.

The death-rates ranged from 11.6 in Swansea to 34.4 in Birmingham: Bradford 18.2, Cardiff 20.2, Gateshead 25.4, Hull 25.7, Leeds 22.5, Leicester 26.8, Liverpool 31.7, London 25.3, Manchester 24.7, Newcastle-on-Tyne 23.8, Nottingham 20.9, Portsmouth 29.2, Sheffield 24.5, West Ham 31.7.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 1, 1896, TO AUGUST 7, 1896.

Leave of absence for one month is granted CAPTAIN WILLIAM D. CROSBY, assistant surgeon, Fort Missoula, Mon.

The leave of absence on account of sickness granted MAJOR JAMES C. WORTHINGTON, surgeon, is further extended one month on account of sickness.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 8, 1896.

G. H. BARBER, passed assistant surgeon, detached from the "New York," ordered home and granted two months' leave.

V. C. B. MEANS, passed assistant surgeon, detached from the "Maine" and ordered to the "New York."

## OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SIXTEEN DAYS ENDING JULY 31, 1896.

CARTER, H. R., surgeon. Directed to inspect Marine-Hospital Service at Tampa, Fla. July 28, 1896.

PECKHAM, C. T., passed assistant surgeon. Directed to report to Surgeon GODFREY, Chairman of Board for physical examination. July 24, 1896.

BROWN, B. W., passed assistant surgeon. Granted leave of absence for six days. July 23, 1896.

STEWART, W. J. S., passed assistant surgeon. Granted leave of absence for four days. July 17, 1896.

DECKER, C. E., assistant surgeon. To proceed from Battle Creek, Mich., to St. Louis, Mo., for duty. July 21, 1896.

PROCHAZKA, EMIL, assistant surgeon. Granted leave of absence for twenty days. July 23, 1896.

## BOARD CONVENED.

Board convened to meet at Port Townsend, Wash., for the physical examination of Passed Assistant Surgeon, C. T. PECKHAM; Surgeon JOHN GODFREY, Chairman; W. G. STIMPSON, Recorder. July 24, 1896.

## PROMOTION.

BANKS, C. E., passed assistant surgeon, commissioned as surgeon. July 37, 1896.

## DEATH.

FESSENDEN, C. S. D., surgeon, died at Salem, Mass., July 23, 1896.

## RECENT DEATH.

JAMES DUNLAP, M.D., M.M.S.S., died in Northampton, August 3, 1896. He was graduated from the College of Physicians and Surgeons, New York, in 1850.

## BOOKS AND PAMPHLETS RECEIVED.

Tenth Annual Announcement of the University of Oregon, Medical Department, Session of 1896-97.

Proceedings of the Eighth Annual Session of the Association of American Anatomists held in Philadelphia, December 27 and 28, 1895, to which is appended a list of members, Washington, D. C., 1896.

Professional Education in the United States, with Statistics of Professional and Allied Schools. United States Bureau of Education, Chapter from the Report of the Commissioner of Education for 1893-94.

## Original Articles.

THE TREATMENT OF TUBERCULOSIS WITH TUBERCULIN AND ITS DERIVATIVES.<sup>1</sup>

BY ALFRED WORCESTER, M.D., OF WALTHAM.

THE medical profession has hardly begun to recover from the disappointment of the wild hopes aroused by the discovery of tuberculin. The previous discovery of the bacillus of tuberculosis, the most important pathological discovery of this generation, has been overshadowed by the failure of tuberculin in satisfying inordinate expectations.

There is little to be gained in recalling the disheartening story of how consumptives in all stages of the disease were injected with haphazard amounts of all sorts of tuberculin. Nor is there any special advantage in following many of these unfortunates to the autopsy table for the proof of their deaths from specific poison. For it is now well known that tuberculin not only will not restore the dying, but that it is an intense poison to tuberculous animals. But neither its lack of miraculous power nor its specific potency justifies its hasty abandonment in therapy. Indeed, it would rather seem from its fearfully poisonous effects in the tuberculous, and from its absolute harmlessness in the non-tuberculous, that tuberculin is the agent or contains the agents desired in fighting this disease.

Before considering its possible therapeutic value let us for a moment think of its undoubted value as a diagnostic agent. However we may differ in estimating the curative powers of different remedies and methods of treatment, there can be no question that it is in the earliest stages of the disease there is the greatest hope of success. This truism is especially applicable to parasitical diseases, like tuberculosis, where, by vegetable growth in the tissues, the infected parts of the body are progressively destroyed.

It was a mighty help given when Koch taught the world to recognize the bacillus of tuberculosis. But before the diagnosis can be made by the microscope it can generally be made without it. And while the detection of the bacilli makes the diagnosis certain, failure to find the germs does not exclude the disease. And in practice the microscopic report as to the sputa is of little use beyond furnishing a convenient occasion for the physician to acknowledge at least to himself what ought to have been recognized before.

The tuberculin test, on the other hand, is of far more help. For long before the destructive inflammation is apparent to sight or touch, and long before the deadly germs are thrust out in the excretions, an injection of tuberculin will discover their insidious presence. A negative result gives absolute surety, which of itself is often of incalculable value, and a positive result is like uncovering the smouldering fire in one's house walls before serious damage is done. The discovery is indeed serious, and for a moment it seems as if stirring up the trouble made it worse. But in neither case is ignorance bliss as regards the hidden foe.

The diagnostic value of tuberculin is easily demonstrated. Its curative value is a far more difficult question. Very few physicians had the courage to continue using tuberculin after their first terrible disap-

pointments; but in the wards of the Berlin Charité, and in some of the European sanitariums (at Rehburg, and at Turban's at Davos), tuberculin has been in constant use since its discovery; and in spite of its almost universal and bitter condemnation it must be admitted that some of the most painstaking and deservedly famous members of our profession firmly believe in its great therapeutic value. Foremost among these scientists stands Professor Brieger of Berlin; to him we are especially indebted for what is known of the chemistry of Koch's tuberculin and of Behring's *heilsrum*. His name stands worthily with theirs.

What little I can report to you to-day I owe first to Brieger's great kindness to me a stranger, and I welcome this opportunity of publicly thanking him for his patient instruction and for his great courtesy in giving me free access to the tuberculosis wards and to the clinical records of his patients in the Charité Hospital, I am, of course, not at liberty to report others' work. but I desire to make plain that my own little experience with tuberculin is only in imitation of what I saw being done by Professor Brieger.

The diagnostic value of tuberculin, as is well known, is due to its poisonous effects upon the tuberculous when given in doses that produce no febrile reaction in the non-tuberculous. It is perhaps not equally well known, but it is no less a fact, that by daily injections of tuberculin in sufficiently small doses at first, and by careful increase of the dose, a tuberculous patient can be given an immunity to the poison of tuberculin quite equal to the immunity possessed by the non-tuberculous. The production and maintenance of this immunity to the poison of tuberculin constitutes the modern therapeutic method of using it, and I am one of those who believe that this acquired immunity to the poison of tuberculin is a great advantage to the tuberculous patient. But before passing to the question of benefit resulting from this treatment we may profitably inquire by what processes this immunity is acquired.

I suppose it may be taken for granted that tuberculin is formed in the tuberculous patient as well as in the culture media of the laboratory. And up to a certain time in the history of the tuberculous patient his body is able to withstand the poison excreted by the increasing bacilli. As the disease progresses this power of resistance increases up to a certain limit, during which time a non-febrile condition obtains, and then, when the natural power of accommodation is at last overstrained, the fell power of the poison is disclosed and the patient rapidly succumbs. During the apparently quiescent period, if the system suddenly be overtaxed in any way, by excessive fatigue or by the invasion of other germs, of malaria, of influenza, or of pneumonia, for instance, the consequences are very serious. For so nicely adjusted are the resistant powers to the body's needs that the least extra burden is intolerable. Here we have a possible explanation of the poisonous effect of an injection of a minute amount of tuberculin into the body of a tuberculous patient. His body is accommodated to what its own bacilli produce, but cannot stand any more. But if this tolerance can be artificially increased by gradually increased demands upon the body's resisting power, a reserve force is secured. In other words, the immunity to tuberculin obtainable in tuberculous patients is just the re-enforcement needed.

It is claimed by some clinicians that pure tuber-

<sup>1</sup> Read before the Massachusetts Medical Society, June 10, 1896, and recommended for publication by the Society.

culosis causes no fever, and that the hectic which almost invariably accompanies the later stages of the disease is really caused by the invasion of other germs into and through the tuberculous tissues. This is a question far beyond my ability even to discuss. But however the hectic may be caused, inasmuch as the value of tuberculin depends upon so using it as not to cause any febrile reaction, its use is of course restricted to the non-febrile forms and stages of tuberculosis. For only in such cases is it possible to be sure that the tuberculin does not incite or at any rate maintain the daily fever.

This restriction makes it much more difficult to determine if the immunity to tuberculin obtainable in tuberculous patients is of any real value. For, as is well known, the non-febrile cases often improve under treatment. Moreover, it is by no means a simple task to use tuberculin in this way. The closest watch must be kept, and the greatest care taken to eliminate all other febrile excitants, while immunizing the patient. And this very care would tend toward the patient's natural improvement. Again, the faith and hope engendered by any form of treatment at the hands of a physician and nurses who believe in it is doubtless as large a factor as it is difficult of estimation.

Whether at home or in the sanitarium, patients under such treatment must have the great advantage of a *régime* in itself well calculated to effect their improvement. But all these difficulties, it may well be noticed, apply to the scientific determination of the value of the treatment and do not affect the patient's interests. Doubtless the guinea-pigs will help in solving the question, and yet it has not been proved that what is true for guinea-pigs is also absolutely true for human patients. And after all, the real determination of tuberculin's value depends upon the slow accumulation of patient clinical investigations carried on not solely in the scientific spirit but with the ever present purpose of helping in every possible way each patient. Were it allowable at the same time to employ only one supposed curative agent, of course it would be far easier to determine the respective values of the different agents successively employed. But we can only add any new treatment, such as we are now considering, to the best possible combination of such other treatments as are already of supposed value. And the value of the new treatment can be estimated only as our experience with it compares with our previous experience. Considered in this manner one's own little experience is humiliatingly small. And after a year's work I find my confidence in the value of this new method of using tuberculin depends vastly more upon what I saw in the Charité wards than upon the few cases I have treated in imitation of Professor Brieger's methods. My own experience, small as it is, has nevertheless confirmed my Berlin impressions into a positive belief in the great value of this treatment.

My patients were not of a class able to travel to distant and more healthful climates, but for many of them the hospital wards afforded far less comfort, and the hospital fare was far less appetizing, than that to which they were accustomed.

In fully reporting my year's work in treating tuberculous in-patients and out-patients at the Waltham Hospital, four cases, admitted during the past month, have not been under treatment long enough to be reported with any advantage, and need not be mentioned; but mention must be made of two cases in which

neither tuberculin nor antiphthisin was used because the patients were evidently so near their death.

Thus, in one case, the patient died on the fifth day after entrance, and in another case the dying patient was sent home after a single week's stay in the hospital.

With the exception of these two cases, which were admitted without having been previously seen and under a misapprehension of their hopeless condition, tuberculin or antiphthisin was always employed,—tuberculin in five cases, tuberculin followed by antiphthisin in two cases, and antiphthisin alone in twenty-two cases. The general treatment was about the same for all. For the preceding five months a few tuberculous patients had been admitted to the hospital and treated by the Carasso method. Three of these patients were turned over to my care June 1, 1895. My colleagues had already found it necessary to modify the Carasso treatment somewhat, on account of the drunkenness caused by the amounts of alcohol which he advises and also on account of the stomach disturbances caused by his creasote and peppermint mixtures. But the inhalation of peppermint had proved so soothing that it has been generally employed ever since. Both the oil and the essence of peppermint have been used for inhalation, but few patients have been able to bear the oil. The Carasso mixture of creasote, peppermint, alcohol, chloroform and glycerine has been helpful, and except in a few cases has been well borne. Occasionally opiates, phenacetine, quinine and a few other drugs have been given for ephemeral reasons.

All patients have been given, so far as was possible, the regular hospital diet supplemented with milk and eggs, and also by wines and whiskey, or brandy, as the occasion seemed to demand. Encouragement has been given in the matter of deep breathing, in keeping out of doors whenever possible, and in coughing as little as possible.

Great care has been taken to minimize the danger of auto-infection as well as the infection of others. Clinical thermometers have always been specially cleaned in carbolic-acid solution. The use of spit cups filled with carbolic-acid solution has been required. Each patient has also been required to rinse the mouth and gargle with a benzothymol solution before eating or drinking.

These precautions and these particulars of the regimen employed are here related merely to complete as far as possible the clinical histories which follow. The longer the duration of the disease the harder it is to give to others the clinical history, or indeed to keep it before one's own mind. Each day's story must be recorded in full, and besides there must be such a recapitulation as may be seen at a glance.

Observations of the temperature, pulse and respiration rates have been made every two hours by day and every four hours by night, if the patients were awake. These frequent observations are necessary in estimating the extent of the daily hectic and in testing the treatment. By means of symbols for the different medicines, I also show upon the charts the exact times of their administration. When each day's story is charted with such detail, a summary chart is also necessary upon which the abscissas represent each a whole day instead of two hours.

Upon the two-hour chart is shown the temperature curve of each day, and the area bounded by this curve and the 99° line (determined by counting the squares

enclosed) gives the product of the excess of temperature by its duration, in other words the amount of daily fever. By transfer of these daily amounts to the summary chart the curve obtained gives at a glance the general run of the fever. Upon this summary chart the frequently varying amounts of tuberculin or of its derivatives is shown and also the number of ounces of food ingested each day. Still another curve shows the patient's weight as taken weekly. In describing the conditions of the lungs, it is much plainer to represent the dulness and the râles, etc., by means of symbols drawn upon a skeleton chart of the chest than by words however well chosen.<sup>2</sup>

In summing up my experience with pure tuberculin,<sup>3</sup> which I have employed in the treatment of seven patients, I have to report that in two of these cases (1 and 2) there was so much difficulty in establishing a tolerance of it that antiphthisin was used instead. Although in several instances too large doses were given, no permanent harm resulted. In one case (2) where by mistake a dose of .2 c.c. was given where .002 c.c. had not been tolerated, there was a most severe reaction lasting for several days. But afterwards, under antiphthisin, the same patient made as absolute a recovery as it has been my fortune to witness. Only once was there failure in maintaining the requisite aseptic conditions for all hypodermic medication. I did not notice quickly enough a clouding of the tuberculin solution, and the four patients injected that day had resulting abscesses which lasted for several weeks. Two of these seven patients have removed far from my observation, one to Ireland (3) and one to North Carolina (4). Both improved under treatment, and, according to reports received, have continued to improve ever since. One (1) is still under the antiphthisin treatment, and has not done more than to hold her own. Two of the five cases where only tuberculin was used have so far recovered as to be practically well, having returned to their former occupations: one (5) in the watch factory, the other (6) in her home. A third (7) has improved greatly in spite of a severe malarial attack. He bids fair to make a practical recovery. Four (1, 3, 4 and 6) of these patients were in advanced stages of the disease. Their lives had been despaired of by their physicians and friends. From previous experience I should not have expected any of them to have lived so long as they have.

If, as is possible, these results might have been obtained without tuberculin, then I have been very remiss in the past—for many a consumptive, when first under my care not so sick as were these patients, has drifted steadily on from bad to worse until released by kindly death from wasting and suffering I was powerless to relieve. And if now it is by no reality, but only by a delusion of both physician and patient, that despair has given place to hopefulness, then am I still thankful for my delusion which I shall none the less strive to share with my professional brethren. For it is better a physician should be a deluded optimist than a scientific pessimist.

Another possible explanation of the apparent benefit resulting from the use of tuberculin and its derivatives depends upon the supposed germicidal power of tuberculin.

If it is true that each organism excretes its own specific poison (and that, just as acorns will not germinate in oak leaf mould, nor pine seed in rotted pine needles, while either soil is fit food for the other seed, so it is true that the bacilli excrete particular poison each for its own kind), then it is possible that tuberculin contains, besides the poison that affects the animal preyed upon, a specific poison also for the bacilli themselves. This theory has apparent support in the fact that tuberculin is the substance in which tubercle bacilli not only have ceased to grow but have actually died. If, as is claimed, it can be shown that the death of the bacilli is caused not by the exhaustion of all their proper food in the culture medium, but rather from the excretion into it of their own peculiar poison, then we may reasonably hope for the isolation of that particular poison.

The ideal remedy for a parasitical disease is a specific poison for the parasite, but absolutely harmless for the animal. We want something that will kill the bacilli of tuberculosis in the tuberculous patient, and yet not injure the patient in any way. Professor Edwin Klebs claims that this desired remedy is furnished in his antiphthisin, which is stated to be a chemical modification of tuberculin containing all the germicidal and curative principles without the toxins. His claim has been bitterly disputed, but it has also been supported by many, and notably by the commission appointed by the Parish Medical Society of New Orleans for its investigation.

Inasmuch as the preparation of antiphthisin is declared to require such exceptional skill as practically to preclude its manufacture except under the immediate oversight of its discoverer, and as Professor Klebs himself is understood no longer to be in charge of the laboratory furnishing it, it must at the outset be admitted that there are grave uncertainties in its use. Although Professor Klebs's name will forever be associated with the bacillus of diphtheria, yet the great work of his life has been upon tuberculosis. His antiphthisin is one of many derivatives of tuberculin which have been and are still being used. Indeed, in the Charité wards, tuberculin derivatives which Professor Koch and Professor Brieger are not yet ready to announce to the world are being used with great success, it is understood. Professor Klebs himself has previously furnished another derivative—tuberculo-cidin—which is said to possess some value. And it is to be hoped that ere long such definite explanations of the exact compositions and methods of manufacture of the tuberculin derivatives will be furnished as will obviate the present reluctance of many physicians to employ these agents.

It is only fair to state that Professor Klebs, in furnishing antiphthisin to the profession, stipulated that it should be used only in the non-febrile or early stages of tuberculosis. He has never claimed that its curative value could be otherwise demonstrated. But he has also stated that sometimes in the advanced stages antiphthisin retards if it does not arrest the course of the disease. And, furthermore, he claims that it never does any harm.

From this very fact of its harmlessness, which, so far as I know, is conceded by all who have used it, very naturally it has been used in the advanced stages of the disease as a last hope—where the daily fever precluded the use of tuberculin. Comparison between the two is thus much more difficult than would be the

<sup>2</sup> Summary charts, as here described, were submitted for each case reported.

<sup>3</sup> I have used the tuberculin made by Koch's manufacturers, Messrs. Lucius, Brunig & Co., whose agents in this country are Messrs. E. Koechl & Co., New York.

case if both agents were used under like conditions; and it needs not the saying that its failure to relieve in the advanced stages of the disease does not disprove its therapeutic value. On the other hand, if by using antiphthisin in the advanced stages any relief or arrest is obtained, that is strong supporting evidence of Klebs's claim of its worth in the incipient stages.

Of the twenty-two cases which I have treated with antiphthisin, ten of them (8, 9, 11, 14, 15, 16, 17, 18, 22 and 25) were in such advanced stage of the disease that if no one of them improved it still would be little discredit to the treatment. But in four of these advanced cases (8, 17, 22 and 25) there was marked improvement; while of the five that did not improve in only one case (15) was the treatment carried out for more than a week or two. Were my experience with antiphthisin confined to these ten cases I should be thankful for having had it; for otherwise I should not have had the courage to have tried even to arrest the progress of the disease. Of course, there is always the doubt as to the correctness of the prognosis, intensified in my case by my lack of any special training or knowledge in diseases of the chest. It is, therefore, proper to add that in making these prognoses, or, what is the same thing, in estimating the extent of the disease, I have had the great advantage of the kind assistance of many brother physicians, whom I should here publicly thank were it not for the fear of involving them in these not yet generally accepted methods of treatment.

Nine of the cases (10, 11, 13, 19, 20, 21, 23, 24 and 26) were not so far advanced. Improvement would naturally be expected to follow any treatment of any use whatever in tuberculosis. But of these nine, none have shown such special improvement as was hoped for. One (26) has shown no improvement. The others have made some gain for a time, but at least three (10, 21 and 23) have not held what gain they at first made. Had they remained longer under treatment in the hospital, possibly they might have continued to gain.

So far then as my small experience goes, the patients who have obtained an immunity to tuberculin do better afterwards than the patients who have been treated only with antiphthisin.

One of the claims made for antiphthisin is that it is serviceable in reducing enlarged cervical glands of tubercular origin. I have employed it in three cases, presumably of this character. In one the glands had already begun to suppurate. For four days .5 c.c. was given each day, without causing any reaction. The suppuration, however, rapidly increased, and the abscess was treated in the usual surgical manner. In the other two cases the marked improvement that followed, if not due to the treatment, was, at any rate, very different from anything within my previous experience. Not only did the deformity disappear but the general health rapidly improved, and in one case a marked daily fever soon ceased. Another claim for antiphthisin is that in cases of tubercular ulceration of the cornea its healing effects can be directly seen. I have tried it in one case (8) of corneal ulceration in an advanced phthisical patient. Rapid improvement and complete healing followed, but before its use, under the ordinary treatment for corneal ulcers, improvement had evidently begun. Although the patient has hardly held his own generally, the corneal cicatrix has grown less and less.

CASE 1. Mrs. R. A., thirty years old, had been treated in hospital by my colleagues for four months previously. She had gained wonderfully — in weight from 100 to 113½, and from helplessness in bed was now able to walk out of doors. There was still daily fever, considerable cough and expectoration in which were plentiful bacilli tub. Both apices were dull, and on the left the dullness extended below the second rib. Over these areas were fine moist râles.

On June 9th tuberculin treatment was begun with .001 c. c. This was gradually increased until July 17th, when .15 c. c. produced a severe reaction. The daily dose was diminished, but no immunity was obtained, and on September 9th antiphthisin was employed, beginning with 0.1 c. c. By November, 1 c. c., and by January, 2 c. c., was being given each day. This was continued with few intermissions until she was allowed to go home April 1st, over 300 c. c. in all having been given.

She then weighed 106 pounds, or six and a half pounds less than she did ten months before, but still six pounds more than on entrance. The fever, however, had not been absent for more than a few days at a time. Her appetite and general condition were good, her cough was less, and there were fewer bacilli tub. to be found in the sputa.

At times the lungs seemed much clearer, but again, perhaps from a slight cold, the râles would return to the diseased upper lobes.

For a month at home she continued to feel pretty well, but in May, after a severe cold, she returned to the hospital with a severe pleurisy in the left lower chest. It seems doubtful if an arrestment of the disease has yet been obtained.

CASE 2. Miss H. S., age forty, family history negative, broke down in health six years ago. Had profuse hemoptysis. Under rest and forced feeding gained strength and health. During the spring and early summer of 1895 she lost ground. Her voice became husky, she coughed considerably, and felt wearied. She had not lost weight. She began out-patient treatment August 19, 1895.

Tuberculin in doses of .0005 c. c. produced a marked reaction. And after a month's trial the attempt to obtain immunity was abandoned, a dose of .004 having caused a severe febrile reaction. Antiphthisin was then given, the dose soon reaching 0.2 c. c. Immediate and marked improvement followed.

But on October 26th, by mistake, .2 c. c. of tuberculin was given instead of antiphthisin. For twenty-four hours her condition was alarming, and for several days afterwards she was very ill.

On November 18th treatment with antiphthisin was resumed. At first a slight reaction followed the administration of 0.1 c. c., but soon 1 c. c. produced no reaction.

For a few days the last of December she had a severe cold, from which she rapidly recovered. By the end of February, when I discharged her, her cough had practically disappeared, and no bacilli could be found in her slight expectoration.

No râles could be heard, but instead, over both apices, loud blowing respiration.

She has since continued in vigorous health.

CASE 3. Miss B. S., a servant girl, had been in the hospital since February 18, 1895, and had been sick for about a year when placed in my charge June 1, 1895.

She had already improved considerably, having gained seven and a half pounds in weight; but her daily fever was constant. Her upper lobes, both right and left, which at first were full of all kinds of râles, had already become clearer. On June 15th, tuberculin was begun with a dose of .001 c. c. At each increase of the dose a marked febrile reaction followed, generally most marked on the second day. But by August an immunity to .1 c. c. was obtained equal at least to her immunity to .001 c. c. two months earlier. In all 3.27 c. c. was given. During this treatment her general health continued to improve, her cough and expectoration lessened, her weight remained practically the same, being only one pound more at the end of the two months. She left the hospital to return to her home in Ireland, where at last accounts she was doing well.

No distinct change in the condition of her lungs had occurred nor in the number of bacilli tub. in her sputa while under the tuberculin treatment.

**CASE 4.** Mrs. G. L. D., thirty-nine years old, entered the hospital July 12, 1895. Family history negative. Began coughing in October, 1894. Confined in December. Recovered well. Had the grippe in February, was in bed a fortnight, and did not recover her strength. Her cough increased and her weight decreased. Very nervous, appetite poor. Free expectoration contains many bacilli tub. Profuse night-sweats. Complexion dusky. Daily fever. Upper right lung extensively diseased.

The tuberculin treatment was begun July 15th with a dose of .002 c. c. With many intermissions, and many changes in dosage, the attempt was made to obtain her immunity to it. By October this seemed to have been effected, and she was transferred to the out-patient department. But this did not work well, for she was unfit to take care of her children. The treatment was often omitted; and when early in November, after a week's intermission, the accustomed dose was given there followed a sharp reaction, but by increasing the dose each day the fever again disappeared.

Meantime her cough decreased. She gained five pounds in weight, and became a much healthier looking woman. In December she went with her family to North Carolina to live, where she has continued to improve.

**CASE 5.** Miss K. D., twenty-six years old, entered the hospital July 31, 1895. Family history negative. For three years she had been working in the watch factory, but in March had been forced to give up work because of a cough following a severe cold and an attack of the grippe. She had been visiting for a few weeks just past in the country, but had been steadily losing strength. Menstruation regular. Appetite very poor. Moderate daily fever.

The upper right lobe was dull on percussion, little air entering it. Subcrepitant and moist bronchial râles were plentiful. She weighed 84 pounds.

She stayed in the hospital fifteen weeks, during which time she gained nine pounds. She was given daily injections of tuberculin, beginning with .002 c. c. and reaching .2 c. c. in fourteen weeks. The fever disappeared, but after an intermission of two weeks when the injections were resumed in the out-patient department there was a slight fever again for a few days. The injections were continued until December 5th, 9.83 c. c. of tuberculin having been used.

During treatment her cough so nearly disappeared that many days elapsed without obtaining any sputa for microscopical examination. At first the bacilli tub. were plentiful but towards the end were rarely found.

The diseased lung cleared up wonderfully, at times being almost entirely clear of râles. Her chest inflation increased from one and three-fourths inches to three inches. She returned to the watch factory January 1, 1896, and except for a few days' absence in March on account of a severe cold she has kept steadily at work. Since then a slight cold has persisted; at times râles are still to be heard, and bacilli tub. are found in the sputa. But her general condition is now vigorous. Although lighter by three pounds than when she left the hospital, she weighs as much as she did before her sickness began.

**CASE 6.** Mrs. C. D., aged thirty-four, had been treated in the hospital for seven weeks previous to my taking charge. She had been ill for one or two years, having had many attacks of hemoptysis—some of them quite severe. She had been confined in February last for the ninth time. She had gained rapidly under hospital treatment, although still confined to her bed. There were still bacilli tub. in her sputa. Over both apices there was dulness and prolonged expiratory sounds with a few medium moist râles. Coughing not troublesome, expectoration scanty, appetite very good.

Treatment with tuberculin was begun June 9th, with .0005 c. c. Immunity was soon obtained, the only serious reaction occurring July 19th, when the dose was increased

from .15 c. c. to .2 c. c. Six days afterwards the same increase produced only a slight reaction, and this dose was continued daily with fever intermissions until December 13th, 76.77 c. c. in all having been given.

Early in July she was persuaded to leave her bed, and soon after to walk about out of doors. On August 15th she was transferred to the out-patient department. The walk of a mile each day soon became easy, and by October she resumed her work, taking the whole care of her family. She regained and surpassed by several pounds her previous best weight. Her cough disappeared, except for occasional colds, and her sputa became free of bacilli tub. During the winter, while doing all her work, and often with her children sick, she ran down somewhat. After a severe cold this spring there has been a slight return of her cough. But she is so well that it has not been possible to persuade her of the necessity even of medical observation. Her left lung seems entirely clear, and at the apex of the right lung there are fugitive râles of a dry explosive character. Under treatment her chest inflation increased from three to four and one-half inches.

**CASE 7.** H. P., a laborer, fifty-six years old, entered the hospital March 5, 1896. Family history negative, except that his wife and children, according to his story, were all tough. Well till January, when, with an attack of grippe a cough began, which has persisted. No appetite and daily fever.

The upper lobe of the left lung was well filled with coarse and fine râles. Bacilli tub. in sputa. On March 12th he was given .01 c. c. of tuberculin, and the next day .05 c. c. without causing any reaction. On March 16th .1 c. c. of tuberculin caused some reaction, but for the next fortnight the same dose caused no reaction. In April he was given .15 c. c. daily and except for a sleepy feeling in the afternoons he experienced no effect. His fever entirely disappeared. He stopped coughing, and gained thirteen and one-half pounds in weight. After April 8th, he was an out-patient. All went well till May 14th, when he had a severe attack of malaria, which he had had before. Under heavy doses of quinine this was checked, but returned ten days afterwards. A slow fever, apparently typhoid, followed, and he is now in the hospital again.

**CASE 8.** W. G., twenty-four years old, entered the hospital December 26, 1895. Several of his family are phthisical. He has been sick for several years, and returned from Arizona in May, 1895, because he was so rapidly failing there. Last summer in Nova Scotia he gained a little strength. In the autumn he lost rapidly, partly because housed with a severe corneal ulcer. It was on this account that he was admitted to the hospital, and his eye soon became as well as ever except for the corneal cicatrix.

Both lungs were diseased. There was a slight daily fever. Coughing excessive. Bacilli tub. in sputa.

On December 30th antiphtisin was begun in 1 c. c. doses. In February, after 10 days at 1.5 c. c., the dose was increased to 2 c. c. There was marked improvement. He gained rapidly in weight, his fever disappeared and his cough slackened. The first week in March he had a hard time with an ulcerated tooth, but his general improvement was at least maintained until May, when he began losing ground—coughing more, eating less, and suffering from backache. By the end of the month, however, he had begun to mend again, and is now in about as good condition as a year ago, when his admission to the hospital was refused on the ground that we thought he would inevitably die very shortly.

**CASE 9.** G. M. M., thirty-one years old, came to the hospital December 5, 1895. One brother died of phthisis fourteen years before, and last year his own little son died of tubercular meningitis.

He had been strong and healthy till March, 1894. Has not worked since February, 1895. Used to weigh 145 pounds. Now weighs 117. Cough is bad. Appetite fickle. Some daily fever.

Both lungs extensively diseased. Bacilli tub. in sputa.



He was given antiphthisin in doses of 0.5 c.c. two days, and when it was increased to 1 c.c. the fever also increased. He remained under treatment only two weeks, "because no assurances of his recovery could be given him." No reports of his subsequent condition have been received.

CASE 10. Mrs. S. C. G., twenty-one years old, entered the hospital November 28, 1895. She was then seven months pregnant, and her labor was threatening. She was intending to be treated for tuberculosis of the left lung. She had been coughing for several months, and recently by examination of the sputa the diagnosis had been made. The physical signs were few, and confined to the left nipple region where fine moist râles and prolonged expiration could be heard. There was no fever.

Antiphthisin was given daily. Her appetite increased, her cough distinctly lessened. Owing to her father's sudden death she returned to her home where, after a normal confinement, the antiphthisin treatment was resumed. But she failed rapidly, and has continued to fail after being moved South. Later reports are even more unfavorable.

CASE 11. Mrs. H. V. G., forty-two years old, had hemorrhages, presumably from the lungs, when a girl. She has had nine children, the last one having died of tubercular meningitis, and the preceding one, at two years old, of well-marked phthisis. An older child is nearly blind from corneal ulcerations. For several years past she has had severe sickness, always attended with cough and generally with hemoptysis. During the past year she has grown much worse. Her appetite was poor. There was a sharp daily fever. The left lung was diseased throughout.

On November 29th .5 c.c. of antiphthisin was given, and soon the daily dose was increased to 1 c.c. She was unwilling to remain in the hospital after a fortnight, and the treatment was continued at the home until January 9th, when the hopelessness of obtaining any relief became so apparent that the antiphthisin was given up. She has since steadily declined.

CASE 12. Mrs. R. J., forty-five years old, had had lung trouble since girlhood. Before her marriage, twenty-five years ago, she had several severe attacks of hemoptysis and was supposed to have only a short time to live. Her four children are in the main healthy, although one has had suppurating cervical glands, and another has chronic middle ear suppuration.

Within the past twelve years Mrs. J. has had several exacerbations of her cough. Each time her life seemed threatened. During the past year she had steadily lost strength. Her appetite had gone, and, for the first time, her courage also. Her cough was troublesome. Her sputa contained bacilli tub. There was daily fever. With difficulty she was urged to undergo treatment with antiphthisin. On December 9, 1895, 0.6 c.c. was given. The fever soon disappeared. The dose was increased to 1 c.c. on December 17th and continued daily till February 28th, when she was discharged in greatly improved condition. Her chest inflation had increased from one and one-half to two and one-half inches; her weight from 106 pounds to 108 pounds. Her cough had diminished, her appetite and courage had returned.

Her left lung on entrance was almost useless, taking in little air, and being full of coarse moist râles from apex to base. The apex of the right lung also was full of fine moist râles.

At the time of her discharge the right lung had cleared entirely, the left lower lobe had become nearly clear, and the left upper lobe had lost the fine moist râles. Dry medium râles had taken their place, and much more air entered the lung. Since then she has continued to improve in weight and strength, and is now about as well as at any time for some years.

CASE 13. W. H., a student, nineteen years old, entered the hospital March 27, 1896. His mother had died of phthisis the year before. He had been fairly well till last summer, when in the West he had malaria. During the autumn his college work grew more impossible. His appetite was poor, and he was completely tired out. After

resting at home for the winter he was worse, coughing more. Bacilli tub. in sputa. Moderate daily fever. His right upper lung well filled with fine moist râles.

On April 1st antiphthisin was begun in doses of 0.5 c.c., increased to 1 c.c. on April 26th and to 1.5 c.c. May 7th, 32 c.c. in all having been given up to the time of his discharge, May 14th. The treatment is being continued in the New Hampshire hills, where he is to spend the summer in camp.

During his stay in the hospital he gained four pounds, but no other improvement was noticeable.

CASE 14. K. E. R., male, twenty-one years old, entered the hospital February 13, 1896. Both parents and one sister died of phthisis. When thirteen years old he had pneumonia and was sick a year. Has worked in cotton carpet mill and in box factory, and for last five months as electric-car conductor. Progressive weakness, with loss of appetite and dyspepsia, compelled him to stop work.

Lung lesions not very marked; a few bronchial gurgling râles in upper right, and more of the same with sub-crepitant râles in the upper left lobe. Bases clear. Respiration not embarrassed. Cough moderate. Few bacilli tub. in sputa. Great distress in stomach directly after eating. For a week he was kept in bed and fed entirely upon peptonized liquid food. There seemed to be some improvement. On the tenth day after entrance 0.5 c.c. of antiphthisin was given, and on the same day he was given solid food and allowed to sit up. He was the worse for it. Four days afterwards 0.5 c.c. antiphthisin was again given each day for seven days, and again after two weeks' interval it was given in 1 c.c. doses for five days; and both times there occurred an increase of fever, whether due to the antiphthisin or to other causes is not clear.

His stomach distress increased, a troublesome diarrhea began, and in every way he failed while under treatment. He was accordingly removed to a Home for Incurables where he soon afterward died.

CASE 15. Miss C. H., a delicate girl of eighteen years, entered the hospital February 29, 1896. Her brother had died of phthisis three years before. For three preceding winters she had been very sick, with pneumonia it was said. During the summers she had been well enough to be out of doors, but for six months past she had failed noticeably in every way. Menstruation absent. Cough troublesome. Bacilli tub. in sputa. Appetite very poor. Daily fever often reaching 104°. Both lungs were diseased, but only very fine moist râles could be heard.

Antiphthisin was given in doses of 0.5 c.c. for ten days, and then increased to 1 c.c. for ten days, and then 2 c.c., and once for four days 2.5 c.c. was given; 91.5 c.c. in all was given during her two months' stay in the hospital. Her fever was continuously high, and was worse during three days when no antiphthisin was given. She lost two pounds in weight. Her left lung began breaking down and in every way she failed while under treatment.

CASE 16. L. J. C., thirty-eight years old, entered the hospital December 12, 1895. Family history negative, but a consumptive patient lived in his family three years ago, in the room which he himself has since occupied. For three years he has had a stomach trouble, and for two years has coughed with scant intermission. Has not been able to work for about a year. Daily fever. His lungs did not show much disease, although his cough was persistent and the sputa well filled with bacilli tub. His stomach rebelled at every attempt to push the diet. On December 25th and for a week following, 0.5 c.c. of antiphthisin was given daily. The fever was much higher, but soon declined and continued to decline when the dose was increased to 1.5 c.c. For three days 2 c.c. was given, and again there was a sharp rise at first and as sharp a decline the two following days with the same dose. But his stomach was so rebellious that all hope was given up. He went home to die and lived only a few weeks.

CASE 17. K. J., a weaver, thirty-five years old, entered the hospital December 9, 1895. Family history negative. For a year has been losing health and strength. He has lost forty pounds in weight. Appetite poor. Coughs



almost continuously. Sputa rich in bacilli tub. No fever. Both lungs extensively diseased.

Antipthysin treatment was begun December 11th, with dose of 0.5 c. c. This was soon increased to 1 c. c., and in a month to 1.5 c. c. Rapid improvement followed. His appetite and weight increased, as his cough diminished. After February 10th, 2 c. c. was given daily. During March a few doses of tuberculin were given, which produced a sharp reaction. Antipthysin was then resumed. April 1st he returned to his home, where although continuing the antipthysin treatment he has not done so well.

While in the hospital his lungs cleared up considerably, some portions becoming entirely clear of râles, and the more seriously damaged portions containing fewer râles. He felt so well and strong that he could no longer bear not being at home and at work.

CASE 18. C. J., twenty-one years old, came to the hospital as an out-patient December 31, 1895. His history is not definite, more than that he had been sick for several years. He was emaciated and very weak. Coughing almost continuously and expectorating freely. Sputa rich in bacilli tub. Considerable daily fever.

Both lungs were diseased throughout. His sisters were told that it was useless for him to come to the hospital, but as he was determined to make the effort he was given the antipthysin treatment beginning January 13th with 0.5 c. c. February 10th this was increased to 1 c. c. and this amount (31 c. c. in all) was given for two months with many intermissions when he was not able to come to the hospital. He improved for a time, in spite of the continued fever. In appetite and general strength, in courage and comfort, there was such a change for the better that his friends became hopeful of his recovery. He himself unwittingly embarrassed us by hunting up other despaired-of consumptives and urging them to apply for the same treatment.

At first there was a gain of three pounds in weight, but this was lost in the next two months. And since he discontinued coming for treatment his strength and weight have fallen off rapidly.

CASE 19. Mrs. M. L., thirty-eight years old, came as an out-patient January 2, 1896. Her brother died of phthisis at her home thirteen years ago; and her two-year old daughter died of tubercular meningitis the following summer. Another brother has phthisis. Her children are well. She had been very well and strong till the autumn of 1893. She then had pertussis and the cough has persisted. From October, 1894 to June, 1895, in Asheville, she gained strength, her only medicine being daily walks over the hills. During the summer and autumn of 1895 she failed.

Her general appearance was healthy, but there was a steady cough with bacilli tub. in the sputa, and a slight daily fever.

Her right upper lung was extensively diseased, a well-marked cavity being surrounded with râles of all sorts and sizes.

On January 7th the antipthysin treatment was begun in doses of 1 c. c. This was increased to 1.5 c. c. February 10th, and to 2 c. c. March 12th.

She walked two miles to the hospital every day, regardless of weather. And after five months, having taken 152 c. c. of antipthysin, her condition is somewhat better than at this time last year on her return from Asheville.

Her weight is about the same, or a few pounds more. Her general condition is improved. Her cough is less. The cavity in her lung is plainer, but the surroundings are clearer of râles. More air enters the diseased lobe. At the apex of her left lung, however, there is at times fine crepitation, which I think is not new but was overlooked at first. The progress of her disease seems to be arrested.

CASE 20. M. O., twenty-six years old, a watchmaker, entered the hospital April 30th, 1896. He had been a healthy boy and his parents, brothers and sisters are healthy now.

Five years ago he had an attack of hemoptysis, a severe cough followed, but disappeared. Three years ago an enlarged cervical gland was noticed, and now his neck is de-

formed with greatly enlarged glands. Just below the chin and also below the right ear are discharging abscesses, recently opened in the Massachusetts General Hospital. He has weighed 136 pounds, present weight 114½ pounds. Appetite fickle. Sleeps well. Can take long walks without fatigue. Daily fever moderate. Cough not troublesome. Bacilli tub. in sputa. In his right lung respiration was much diminished, and both coarse and fine moist râles were to be heard from apex to base.

Antipthysin was begun May 4th in doses of 0.5 c. c. On May 16th the dose was doubled, 5.24 c. c. having been given during the month. His improvement is already noticeable. The glands have diminished, his weight has increased two and one-half pounds and his right lung is clearer at the base. His chest inflation has increased from one and one-half to three and one-half inches.

CASE 21. Miss M. L., twenty years old, entered as an out-patient December 4, 1895. Parents living. One sister died of phthisis four years before. Three years ago she was all run down and had a severe bronchitis. Has coughed ever since, and more for the past six months. Menstruation never regular. Is now only three pounds short of best weight. Works in the watch factory.

Right upper lobe dull; increased vocal fremitus, subcrepitant râles. Bacilli tub. in sputa. Slight daily fever. From December 13th to January 6th 1 c. c. of antipthysin was given except for two intermissions of six days each until March 4th, when she left for Colorado.

Several times during this time she caught cold and each time lost the few pounds she had meanwhile gained. But her lung on the whole improved. The plentiful fine moist râles gave place to occasional dry explosive râles. More air entered. Her chest inflation increased from two and one-half inches to three and three-quarters inches. She has since lost ground in Colorado.

CASE 22. Miss W. M., had worked in the watch factory for several years before entering the hospital February 17, 1896. There has been much phthisis in her family. Three years ago she had pneumonia, and one year ago bronchitis. Has been coughing ever since, especially at night. Expectoration free and full of bacilli tub. Very feeble, almost no appetite, high fever in the afternoon. Very thin and anemic. Both lungs diseased, hardly a clear spot to be found in either.

The antipthysin treatment was begun March 1st in doses of 0.5 c. c. and increased to 2 c. c. by March 26th. Up to June 1st 89 c. c. were given.

For a few weeks her life seemed near its close, but to the surprise of every one, she rallied. Her fever subsided, her appetite and strength returned, the cough diminished, her weight increased by nine pounds.

On May 14th she was transferred to the out-patient department, and she has since continued to gain in every way.

There are well-marked cavities in each upper lung, more marked than at first, as is often the case in the convalescence of tuberculous lungs. But more air enters, the râles have greatly diminished, and she feels well again, being able to walk several miles each day without fatigue.

Her daily charts for her first and tenth weeks under treatment show even more plainly than her summary chart how great was her gain. And these daily charts also serve to explain the method, previously described in this paper, of estimating for the summary chart the amount of the daily fever.

CASE 23. Mrs. S., thirty-two years old, entered the hospital February 28, 1896. Family history negative. She has four children, and had been perfectly well till December, 1895, when she caught cold. She was then much run down, because of her baby's long sickness. In January her cough increased, and for several weeks she was confined to her bed.

Her weight on entering was 105½ pounds. She had a moderate daily fever.

There were rough friction sounds in the upper right and absolute flatness with bronchophony and coarse râles in the lower right chest. In the left nipple region were fine and medium moist râles.

She remained in the hospital sixty-three days, during which she gained seven and one-half pounds; 50 c. c. antiphthisin were given her, in doses from 0.5 to 1.5 c. c.

Her appetite and general health improved. The fever, which was very variable, lessened. The left lung became entirely clear. The upper right improved, but the flatness in the lower right remained.

During the month following her return to her home she had more fever and lost some in weight.

CASE 24. W. Z. R., a farmer, thirty-one years old, was treated as an out-patient of the hospital from November 22, 1895, to February 6, 1896. A brother living with him had died of consumption in 1894. In March, 1895, he had severe pleurisy followed by a heavy "cold on the lungs." In August he had malaria, after which his cough was worse. He had weighed 160 pounds, present weight 145, appetite poor, coughing constantly. Bacilli tub. in sputa. His upper left lobe was dull and full of medium and fine moist râles. Antiphthisin was given him in doses of 0.5 c. c. for five days, and then by daily increase of .1 c. c. up to 1 c. c., which was given for twenty-five days in succession. His improvement was very marked, in spite of an acute abscess in the left middle ear, which caused high fever and interrupted the treatment for several days. During the following month the antiphthisin was given in larger doses, 3 c. c. having been given two days in succession, with steady lessening of the fever. In all 90 c. c. were given him. He gained eight and one-half pounds. His chest inflation increased from three and one-half to four and one-quarter inches. The râles diminished. Although doing well, he was advised to take an opportunity to remove to North Carolina, where his improvement is reported to have continued.

CASE 25. Miss B. G., seventeen years old, entered the hospital August 26, 1895. Her mother died of phthisis a year before. When four years old, she had a long siege of suppurating glands in the neck. Never a strong girl. Menstruation irregular, none since February. Has coughed for several months. Has lost 12 pounds since January, although appetite has always been good. Complexion poor, of dusky bluish tinge. Left upper lung dull to percussion, full of fine moist râles. Many bacilli tub. in sputa. Daily fever, which was increased by injections of .001 c. c. of tuberculin.

On September 9th antiphthisin was begun in doses of 0.1 c. c. For a few days the fever was apparently increased, and so again ten days afterwards, when the dose was gradually being increased to 0.5 c. c. But when, after a few days of intermission or of smaller doses, 0.5 c. c. was again given, there was not nearly so much reaction; and a month afterwards, when the dose was increased to 1 c. c. there was hardly any febrile reaction. The same treatment was continued till January 4th. When she was transferred to the out-patient department November 13th, her cough had practically ceased. No bacilli tub. could be found in her expectoration. She weighed more than ever before, having gained 17½ pounds. Her fever disappeared entirely.

During the early winter she was very well, walking several miles a day or skating for several hours without fatigue. By midwinter she began to complain of pain in her "stomach." She caught cold and began to cough.

Her home was ten miles away and her infrequent visits to the hospital and lack of careful records prevented such oversight as was desirable. Occasionally she was given 1 c. c. doses of antiphthisin which she persisted produced fever. Her weight fell off four pounds. Examinations of her chest revealed no cause for her increasing debility, which was therefore ascribed to dyspepsia. On May 1, 1896, she was re-admitted to the hospital and then the cause of the "stomach-ache" was soon apparent. The abdomen was tender and somewhat rigid. In the right iliac fossa was a tumor the size of an orange, exquisitely tender at McBurney's point. This had probably developed only within the past few days. Surgical interference naturally followed. A few ounces of foul pus escaped from an abscess cavity, the walls of which were made up of thickened omentum and mesentery. The appendix was not

found, but bluish semi-translucent glands the size of a pigeon's egg were found in abundance. Some of them were dug out. Her father on seeing some of them said he had shortly before killed a cow, fat and healthy apparently, but full of the same kind of glands.

She rallied well from the operation, but has since been kept flat, the wound healing only slowly and the fever being constant. There has been no coughing since the operation but she seems to be steadily losing ground.

CASE 26. T. A. E., a student, seventeen years old, came to the hospital May 10, 1895. For two months previously he had been taking antiphthisin under the care of Dr. J. T. G. Nichols, with whom I had the pleasure of serving in consultation.

The family history is negative. During the summer of 1895 he worked hard, and was in consequence somewhat run down. In December he began to cough. In January he was found to have a slight daily fever, there were râles in the left apex, and bacilli tub. in the sputa.

The disease was evidently making progress when the antiphthisin treatment was begun, March 5th, in doses of 0.5 c. c. By successive increments of 0.5 c. c. the dose was increased to 2 c. c. by April 9th. As the daily fever grew worse the dose of antiphthisin was reduced to 1 c. c. for the first two weeks of May, and during April and May it was often given only every other day or with occasional intervals of two days. No connection favorable or unfavorable could be discovered between the administration of the antiphthisin and the daily fever. On May 10th he was moved to the hospital. His left lung has progressively degenerated. In April there seemed to be trouble at the right apex, but this has since disappeared. He does not seem as sick as his high daily fever would seem to warrant. The most that can be said is that while no apparent effect has followed the use of antiphthisin yet he does not seem to go down hill as rapidly as our former experience would lead us to expect.<sup>4</sup>

## NUCLEINS AND NUCLEOPROTEIDS IN THEIR RELATION TO INTERNAL SECRETION.<sup>1</sup>

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THE internal secretion of glands is rapidly becoming a subject of primary importance to the physiologist, and its development bids fair eventually to furnish the physician with a fund of knowledge directly applicable to the explanation of many obscure disorders, and replete with suggestions as to methods of treatment. Until quite recently the more prominent secreting glands and structures of the body have been associated solely with their obvious function of manufacturing a specific secretion or excretion to be discharged externally through special conducting tubes. The existence of so-called ductless glands, however, such as the suprarenals, thyroid, thymus, etc., with cellular structure bearing all the marks of active tissue, has long pointed to the probable manufacture in such glands of specific secretions designed solely for internal use, namely, the manufacture of substances which may be at once reabsorbed into the blood, and perhaps utilized in a variety of ways for controlling and regulating either special or general metabolism.

There is, however, no reason for limiting such a form of secretory activity to the ductless glands, for, as is quite obvious, every part of the body is the seat of some form of metabolism by which certain products result, and these in some shape may be returned

<sup>1</sup> Read before the Massachusetts Medical Society and recommended for publication by the Society, June 10, 1896.

<sup>4</sup> This paper with illustrative charts will appear in the Transactions of the Massachusetts Medical Society.

to the blood, and thus distributed through the body, their physiological action being thereby rendered available. Hence, the blood may be in continual receipt of a variety of useful substances, products of the internal secretion of various glands and tissues. Indeed, it is quite probable that some, and possibly all, secreting glands, even those endowed with the power of manufacturing such important external secretions as the pancreatic juice and the bile, are of greater value to the body because of the products constituting their internal secretions than from their ability to manufacture more obvious external secretions. The truth of this assertion has been clearly established in the case of the liver and of the pancreas, and probably also even with the kidneys. The complete removal of the liver and of the pancreas is, as is well known, followed very shortly by death, and this not as the result of the absence of the bile and the pancreatic juice, but rather from the deprivation of those internal secretions, emanating from these glands, which influence the general metabolism of the body.

As Hédon and others have shown, it is quite possible to destroy the ordinary secreting cells of the pancreas, thus doing away entirely with the production of pancreatic juice, without any of those symptoms so characteristic of the entire removal of the gland. If, however, the gland is entirely removed, symptoms of glycosuria at once appear, and the animal speedily dies. Further, if in extirpating the pancreas a small portion of the gland is left, this residue of glandular tissue may be sufficient to prevent the appearance of serious symptoms. Or, if a small piece of pancreas from some other animal is grafted on, either into the peritoneal cavity or even under the skin, the entire pancreas may then be removed without the appearance of glycosuria. In other words, we have in these facts pretty certain evidence that the pancreatic gland manufactures something, in small amount perhaps, which is eventually poured into the blood, and which prevents the excessive formation of sugar in the body, or enables the body to burn the sugar that may be formed.

This, then, may be taken as an illustration of the importance of internal secretion, since in this gland, which plainly has an important function in the manufacture of the pancreatic juice, there is formed something absolutely essential for the physiological equilibrium of the body; something which is thrown into the blood-current, and without which the body cannot thrive. This is unquestionably not true of all glands, at least to the same extent. Thus, in regard to the salivary glands, or more particularly the parotids and submaxillary glands of the dog, Schäfer<sup>2</sup> has very recently shown that these glands, unlike the pancreas, do not furnish any specific secretion necessary to the life of the animal or having any important action upon any of the metabolic processes. At least, the complete removal of these glands does not noticeably impair the nutrition of the animal, from which we must infer that if any internal secretion is supplied by these glands "it must be one common in character and function with that of some other organ, or at least one which can with ease be vicariously supplied by another organ."

It is not my purpose here, however, to enter into detail regarding our knowledge concerning the inter-

nal secretions manufactured by the liver, kidneys, thyroid, pituitary body, suprarenals, etc., but I would emphasize the fact that information already accumulated shows plainly that all of these glands are active in the formation of internal secretions, all of which are endowed with marked physiological properties. No doubt, too, this metabolic activity characteristic of these several glands results, in some cases, in the formation of several physiologically active substances, some of greater importance than others. From this it is very evident that the general metabolism of the body must be more complex even than hitherto supposed, and that many of the functions of the body are dependent upon other functions more or less obscure.

The manufacture of the specific substances which give character to the various internal secretions is obviously a function either of special cells contained in the gland, or it may be in some cases an inherent quality of all the cellular elements of a given gland. In the pancreas, the formation of the active agent is apparently limited to an interstitial epithelium-like tissue occurring in isolated patches throughout the gland, and especially characterized by its vascularity. This epithelioid tissue is certainly distinct from the secreting alveoli, and is suspected at least of being the source of the internal secretion. Again, in the suprarenals, as Schäfer and Oliver have shown, the active principle, which has such a marked influence upon the heart and arteries, is contained only in the medulla of the gland and not in the cortex, the medulla forming about one-fourth of the gland by weight.

However specialized the cells concerned in the manufacture of these physiologically active substances may be, they are certainly typical cells with distinct nuclear protoplasm and cytoplasm, and if one is to unravel the nature of the chemical processes by which the active agents are produced and learn their true origin, as well as their exact chemical structure, it becomes necessary to study the character of the material of which the cells are composed, and out of which the physiologically active principles are constructed. It is quite proper to say that these bodies originate through the metabolic activity of the cell, but such a statement carries with it little exact knowledge and throws little light upon either the nature of the process or the character of the resultant products. Further, as already indicated, we must not limit our conception of internal secretion to a few isolated glands, but keep clearly in mind the fact that wherever there is metabolic activity absorption of products is liable to occur, and is no doubt a constant feature of all glands and tissues, although obviously not all organs yield katabolic products of vital importance. Yet, doubtless all of the so-called leucomaines formed throughout the body, especially in the muscular tissue and glandular organs, innocent though they are of any marked physiological action, do have functional power and are of aid in keeping up that physiological equilibrium so essential to the well-being of the body, and for the smooth running of the vital machinery. We know well that any excessive accumulation of these normal leucomaines gives rise to noticeable disturbance of the system, and we already associate their presence under such conditions with definite symptoms. Why then should we not attribute some power to these substances when present in nor-

<sup>2</sup> *Journal of Physiol.*, Vol. xix, No. 4. *Proceed. Physiol. Soc.*

mal quantities, and give full recognition to their possible value as internal secretions?

In this broader sense, then, internal secretion must be going on all through the body and this aspect of the subject truly merits our careful consideration. At the present time, however, interest naturally centres around those more striking phenomena which pertain to those internal secretions, study of which has furnished clear proof of their vital importance. The physician well knows that failure of one or other of these internal secretions is a matter of vital import, while the recognition of such failure is necessarily the first step in the process of treatment. Again, experience has already shown that the physician may hope to avail himself of the active principles which the internally secreting glands afford, and in certain cases to use either their extracts or the active principles themselves in place of the hitherto more commonly employed vegetable medicaments.

Chemically considered, we have to-day a certain amount of knowledge concerning the nature of the active substances secreted by the thyroid gland and the suprarenals. In the case of the latter glands, the active principle is a body soluble in water and in dilute alcohol, insoluble in absolute alcohol, ether, chloroform, benzine, amyl alcohol, etc. In aqueous solution, it dialyzes readily through parchment, the diffusate being entirely free from proteid. Hence, the active principle cannot be a proteid body. It is, moreover, fairly stable, not being destroyed by moderate boiling, nor by the action of acids, and it is also fairly resistant to the action of the gastric juice. It is, however, readily destroyed, that is, its physiological power is lost, through the action of alkalies, by oxidizing agents, and by continued boiling. It is apparently a powerful reducing body, and by oxidation, as with hydrogen peroxide, or with alkalies in the presence of oxygen, a rose-red color is produced accompanied by rapid loss of physiological action. As to more definite knowledge concerning the chemical nature of the substance, we know nothing. It is plainly a very active substance, for as Schäfer and Oliver have shown,  $5\frac{1}{2}$  milligrammes of the desiccated suprarenal gland are sufficient to obtain a maximal effect upon the heart and arteries in a dog weighing 10 kilogrammes. But as the active principle is contained only in the medulla of the gland, and this does not form more than one-fourth of the gland by weight, and as full nine-tenths of the medulla are composed of proteid and other non-diffusible matter, it is calculated that  $\frac{1}{100}$  of a grain of the pure active principle is sufficient to produce distinct physiological results upon the heart and arteries of an adult man. The conclusion is therefore obvious that the actual amount of this substance elaborated by the suprarenal gland is exceedingly small, a fact which plainly stands in the way of a more thorough study of its properties. Enough is known, however, to show that this substance, which is of primary importance to the body, must result from very decided metabolic changes. Assuming its origin to be some one or more of the proteid molecules of the cell, it is plain from the non-proteid nature of the substance that its manufacture must be attended with profound secretory changes.

In the case of the thyroid gland we have evidence, thanks to the painstaking work of Baumann and his colleagues, that the physiologically active substance of this gland is an organic iodine compound — thyroiodin.

This body manifests no proteid reactions, though on decomposition by heat it evolves an odor of pyridin bases. It contains a large proportion of nitrogen, and about 0.5 per cent. of phosphorus in organic combination, a fact which suggests the possibility of its being a direct cleavage product of nucleic acid. Thyroiodin can be prepared from the thyroid glands of man and animals, by boiling the glands with sulphuric acid, or by treating them with artificial digestive fluids, a fact which testifies to the comparative stability of the active substance. When purified, it possesses weak acid properties, is readily dissolved by alkalies and in part by cold water. The iodine is in very firm combination, and is present in the molecule to the extent of 10 per cent. Only a small proportion of the thyroiodin obtainable from the gland exists in a free state, the bulk of the substance being combined with two proteids — an albumin and a globulin — the former predominating. From these compounds thyroiodin can be split off by the action of dilute sulphuric acid. Repeated experiments have demonstrated that the physiological activity of the thyroid gland, so noticeable in myxedema, adipositas, etc., is due solely to the thyroiodin, and it is to be noted that excessive doses of this compound give rise to the same toxic symptoms that are frequently produced by the ingestion of large quantities of thyroid glands. This active principle of the gland undoubtedly makes it way to other organs. Baumann, indeed, has detected iodine in the thymus of the calf, and Professor Miculicz of Breslau has observed a decrease in the size of thyroids in goitre after repeated ingestion of thymus glands. At the same time it is evident that thyroiodin is not a product of general metabolism, but its formation is apparently restricted to the thyroid gland, although the product once formed may be utilized in a variety of ways, and doubtless in different parts of the body.

All of the secretions of the body emanate from the functionally active cells of the various glands and organs, and the origin of the internal secretions is to be sought for in the metabolism of the gland cell. In the evolution and development of the different glands of the body we have tangible evidence of morphological differentiation, both as regards external form and as regards the constituent cells, and this no doubt is accompanied by a corresponding functional or chemical differentiation, the extent of which we are wont to measure by the variations in chemical composition, either of the gland or tissue as a whole, or of the external secretion which it manufactures. To this must now be added the composition and function of the internal secretions, which give a still wider variety to the many functions of the body. How are we to explain this variety of function so characteristic of the different glands? Where are we to seek for the origin of the many diverse products which are found in the different secreting structures? To the chemist only one explanation seems probable, namely: that the different gland cells must be endowed with a distinctive form of cell protoplasm, and when this is called into activity under normal circumstances certain products invariably result from the very nature of the protoplasm, that is, from its peculiar chemical constitution. Every gland, organ and tissue of the body must therefore have its own particular kind of cell, and this personality is not to be considered as restricted to its morphology, but as applicable also to the chemical constitution of its cell protoplasm, upon

which rests its function. In every animal cell we recognize at least two physiologically distinct parts, the nucleus with its contained karyoplasm and the body of the cell with its constituent cytoplasm, and in my judgment the so-called inherent qualities of a cell — its functional power — reside in the chemical nature of the groups and radicles which enter into the karyoplasm and cytoplasm.

According to this view functional differentiation is dependent upon the character of the anabolic processes; it is this which determines in great part the nature of the cell and the character of the products resulting from its activity. Hence, cell protoplasm is not an entity of ever constant chemical composition common to the cells of all glands and tissues, and yielding different products in different localities according to nerve or other influence exerted by the peculiar environment, but on the other hand, there must be a typical form of cell protoplasm for each distinct group of cells, each form with enough individuality to admit of its certain detection on application of the proper tests. Abnormality of function may thus be due as much or more to perversion of the anabolic processes of a cell or group of cells, as to any direct modification of the katabolic processes; in other words, modification of the anabolic processes results in the formation of what might be called an abnormal protoplasm, and this necessarily leads to the formation of peculiar or abnormal products, recognition of which constitutes the best and perhaps only proof of the abnormality.

These views being correct, it is quite misleading to speak in the general way frequently adopted of cell protoplasm and its primary constituents. In other words, the primary constituents of one group of cells, as in the thymus, for example, must be of a different nature from those common to the protoplasm of the liver cells. Hence, there are no primary constituents common to all forms of cell protoplasm, but each variety of cytoplasm and karyoplasm, in my judgment, has its own peculiar make up. By this I do not mean that the various forms of cell protoplasm necessarily existent in the human body are superficially, at least, as varied in composition as the products which emanate from the activity of the various glands and tissues. With large and complex molecules, such as are common to living protoplasm, considerable variety may be introduced into the structure without leading to any very great external difference, but if we could only unravel and spread out before us the many simple groups that enter into the make up of the varied forms of complex protoplasm, I fancy the differences would be even more striking than is suggested by the character of the products which result from the breaking down of the various forms of glandular protoplasm.

Superficially, however, cell protoplasm, whatever its origin, has a certain uniformity of composition, and the body or bodies which stand out most prominently as characteristic of the cytoplasm and karyoplasm of all active cells, are a peculiar group of compound proteids known as nuclealalbumins or nucleoproteids, all characterized by containing more or less phosphorus. A few years ago our knowledge of these bodies was very limited — and indeed it is none too complete to-day — but recently our knowledge has been growing very rapidly and we are learning that under the name of nucleoproteids, nuclealalbumins, nucleins and nucleic acids we have to deal with a class of very remarkable bodies which constitute the greater part of the nucleus

and cytoplasm of nearly all cells, and which evidently play an all-important part in every form of cell metabolism. Proteid or albuminous bodies have long been known as the chief constituents of protoplasm, but we now understand that it is not as simple proteids that these bodies exist in the cell, but mainly as compound bodies, that is, as combinations of nucleic acid with some form of proteid or albuminous matter.

Between the cytoplasm and karyoplasm of a cell the cytologist recognizes a distinct and usually constant difference, which shows itself at once on the application of appropriate dyes. The nucleus of the cell we say is rich in nuclein, while the cytoplasm, and perhaps the nucleoli as well, are characterized by the presence of nuclealalbumin with a less marked affinity for dyes. But nucleins and nuclealalbumins or nucleoproteids differ from each other simply in the proportion of proteid and nucleic acid which they contain. The bodies of this class are all acid bodies, of weak acidity to be sure, and with a varying degree of acidity, but sufficiently marked in every case to suggest the presence of some form of acid radicles. This fact, indeed, led to the discovery of nucleic acids, bodies readily obtainable from all forms of true nucleins by the action of dilute alkalis, the latter seeming to break up the combination existing between the acid and the albuminous matter with which it is naturally combined. A so-called nuclein is thus seen to be simply a combination of some form of proteid matter with a nucleic acid, while a true nucleoproteid or nuclealalbumin is a combination of a nuclein with more albuminous matter.

Nucleic acid, as ordinarily prepared, is a white amorphous powder of strong acid reaction, readily soluble in water containing a small amount of alkali, and with a strong affinity for proteid matter of all kinds. In composition, nucleic acid is characterized by its large percentage of phosphorus, as much as 9 or 10 per cent. of this element being found in some forms of this acid. According to Kossel, the proportion of nitrogen and phosphorus in all nucleic acids is as three to one. But while all forms of nucleic acid may contain a certain definite proportion of nitrogen and phosphorus, they differ from each other very decidedly in their inner structure, as indicated by the character of their cleavage products. Indeed, it was only by studying the decomposition products of nucleic acid from various sources that a suggestion was obtained of the existence of different forms of this acid. Thus, if the nucleic acid separated from the cells of the thymus gland be boiled with dilute sulphuric acid it yields a large amount of a peculiar nitrogenous base called adenin, with some guanin and the new base, cytosin. On the other hand, the nucleic acid obtainable from the sperm of steers yields by similar treatment not adenin, but mainly xanthin, hence this acid may be appropriately termed xanthylic acid. Again, the nucleic acid obtainable from yeast cells yields on decomposition four distinct nitrogenous bases, namely, xanthin, guanin, adenin and hypoxanthin, from which we infer that this particular acid is in reality composed of several, possibly four, distinct varieties of nucleic acid.

Another fact which implies the existence of even a greater variety of nucleic acids is found in the presence of carbohydrate groups in some acids. Thus, the nucleic acids obtainable from the cells of the pancreatic and mammary glands, as well as those prepared from yeast cells, yield by cleavage a reducing carbohydrate,

while from the acid of the thymus-gland, levulinic acid has been obtained. In some other forms of nucleic acid, on the other hand, no carbohydrate groups can be detected. Again, there are some forms of nucleic acid — so-called paranucleic acids — from which no nuclein bases whatever can be obtained by decomposition. Hence, it is very evident that under the head of nucleic acids we have to deal with a large class of closely related bodies, superficially showing a close resemblance in general reactions and properties, but with a diversity in inner structure clearly suggestive of corresponding differences of function.

Some one or more of these acids are to be found in every active cell of the body, generally not free, but ordinarily combined with more or less proteid matter of some kind to form the various nucleoproteids and nucleins which, in great part, compose the karyoplasm and cytoplasm of all living cells. The properties and general characters of the nucleoproteids and nucleins, and hence likewise of the karyoplasm and cytoplasm of the cell, depend mainly upon the amount and character of the nucleic acid united to the proteid. Generally, the nuclear protoplasm is rich in nucleic acid as indicated by its high content of phosphorus and by the character of the stain yielded by certain dyes. The cytoplasm, on the other hand, usually contains a smaller proportion of nucleic acid with a larger admixture of proteids; that is, the cytoplasm is mainly composed of nucleoproteids with a comparatively low content of phosphorus. Variations in the amount and character of the nucleic acids, as well as of the proteid, existent in the nucleins and nucleoproteids of cell karyoplasm and cytoplasm obviously affect the ordinary reactions of the protoplasm; but of still greater importance, physiologically, is the influence exerted by this variability in determining the functional peculiarities of cell protoplasm; a variability which may well be assumed as all-sufficient to account for the peculiar lines of metabolism characteristic of the individual glands and tissues of the body.

If we take the content of phosphorus as a measure of the proportion of nucleic acid contained in the various forms of nucleoproteids thus far studied, we find exceedingly great variations in the amount of this acid present in the molecule; a fact which may be taken as evidence of the large number of molecular combinations present in the protoplasm of different cells. Thus, from the kidneys we obtain a nucleoproteid with only 0.37 per cent. of phosphorus, while as representing the other extreme we have in the pancreas a nucleoproteid containing 4.71 per cent. of phosphorus, and in the lymphoid cells of the thymus a corresponding body with 3.5 per cent. of phosphorus. While these various combinations, modifying as they do the composition of the cell protoplasm, are of the greatest moment in determining the metabolic activity of the cell, of far greater importance is the variable character of the nucleic acid present in the plasma, since this introduces an element which may well determine the line of metabolism. Variation in the quality and quantity of the chemical material entering into the structure of the karyoplasm and cytoplasm of the cells of the body is thus clearly indicated, and the character of the most variable elements — the nucleic acids — may well attract our attention as offering a tangible explanation of one cause, at least, of the striking individuality of the various gland cells. In the structure of the individual nucleic acids, with their marked

tendency to yield specific nitrogenous bases, bodies which are common katabolic products of many glands and tissues, we see a plausible opportunity for explaining the origin of many substances characteristic of both external and internal secretions. I must admit there is much that is theoretical in this suggestion, but I know of no line of study which offers equal inducements in the way of explaining the origin of the peculiar bodies which give character to the internal secretions. The very nature of the many bases which come from the cleavage of the nucleic acids outside of the body; the ready convertibility of these bases into other allied bodies by oxidation and reduction; their own physiological action, which though mild is marked; the possibility, nay the probability, that many other katabolic products may be obtained from these nucleic acids; and further that still other nucleic acids, at present undiscovered, may exist in the cell protoplasm; all offer good reasons for believing that the nucleins and nucleoproteids, which are the most prominent constituents of the protoplasm of all cells, are the most probable antecedents of the internal secretions.

In conclusion, allow me to say with reference to nucleins and nucleoproteids that due consideration should be given to the probable difference in physiological action of the several nucleic acids. We all, I am sure, believe in the close relationship existing between chemical constitution and physiological action, and since it is very evident that the specific nucleic acid of the thymus is quite different in chemical constitution from xanthylic acid, for example, it follows that corresponding differences in physiological action may likewise exist. Consequently, if so-called nuclein therapy is to have a legitimate trial it is to be hoped that ultimately distinct forms of nucleic acid, nucleins, etc., may be available for the use of the pharmacologist and the clinician.

#### CASES OF ABDOMINAL SURGERY OCCURRING IN THE FIRST SURGICAL SERVICE OF THE BOSTON CITY HOSPITAL DURING THE FOUR MONTHS' SUMMER SERVICE OF 1895.

BY FRANCIS S. WATSON, M.D., *Visiting Surgeon.*

THIS series comprises 50 cases, and includes all those in which abdominal section was performed during the time mentioned above, with one exception, that of a case of excision of the gall-bladder and a portion of the liver for malignant disease, which was done in 1894.

In 43 of the total number, the operations were done by the writer, in the other seven, by Drs. Post, Monks, Munro and Lovett.

The report is presented in two parts, of which this, containing 22 cases, is the first.

Seven cases have already been published by this JOURNAL separately, because of their importance, in fuller detail than would be possible for the whole; they are the last mentioned in the list, and with them will be found references to the numbers of this JOURNAL in which they appeared.

Septic infection of the wound occurred in five out of the whole number of cases, in the form of stitch-abscesses, in three cases of hernia and of general wound infection in two.

The cases are as follows:



Case 1. Hysterectomy.	
2. Hysterectomy . . . . .	D.
3-6. Ovariectomy.	
7. Salpingitis.	
8. Salpingitis . . . . .	D.
9-10. Salpingitis.	
11. Salpingitis (Dr. Munro).	
12. Tumor of the broad ligament . . . . .	D.
13. Exploratory laparotomy, hypertrophy of the liver.	
14. Exploratory laparotomy, psoas abscess (Dr. Munro).	
15. Exploratory laparotomy, tubercular peritonitis . . . . .	D.
16-21. Hernia.	
22. Sarcoma of the omentum, resection of the intestine . . . . .	D.
23. Primary cancer of gall-bladder, secondary of liver.	
Excision of gall-bladder and a portion of the liver . . . . .	D.
24, 25. Gall-stones. Cholecystotomy.	
26. Gall-stone impacted in the orifice of the common duct. Cholecystotomy . . . . .	D.
27. Appendicitis . . . . .	D.
28-30. Appendicitis.	
31. Appendicitis . . . . .	D.
32-33. Appendicitis (Dr. Munro).	
34. Appendicitis, salpingitis, inflamed diverticulum.	
35. Appendicitis.	
36. Appendicitis . . . . .	D.
37-42. Appendicitis.	
43. Stricture of female urethra. Suprapubic cystotomy . . . . .	D.
44. Calculus impacted in the ureter. (?)	
45. Pyo-nephrosis. Nephrotomy.	
46. Pyo-nephrosis, renal calculus in a floating kidney. Nephrotomy.	
47. Movable kidney. Nephrorraphy.	
48. Tuberculous kidney. Resection of the lower half of the organ.	
49. Perforating typhoid ulcer. Intestinal suture, recovery.	
50. Hour-glass contraction of the stomach due to cicatrization of former gastric ulcer. Anastomosis between the upper and lower portions of the stomach.	

Total number of cases, 50; deaths, 11; mortality, 22 per cent. From this number of deaths two must be subtracted as not due to operation, namely, those of cancer of the gall-bladder and tubercular peritonitis, the patients dying from extension of the disease two months after operation. This reduces the operative mortality to 18 per cent.

**CASE 1. Multiple fibromata of the uterus. Abdominal hysterectomy. Recovery.**

The patient is forty-two years old. Three years ago she began to have uterine hemorrhages. For one year she has flowed almost constantly, though never profusely at any time. There has been but little pain.

A hard oval tumor connected with the uterus occupies the lower part of the abdomen, and rises nearly to the umbilicus. It is freely movable, and its surface is nodular.

Operation, August 21, 1895. The abdomen was opened in the median line by a four-inch incision above the symphysis. The tumor was about the size of two fists, and consisted of multiple fibro-myomata of the uterus. Trendelenburg position. The uterus and the tumor were readily lifted out of the wound. The vessels were secured by two rows of ligatures in the broad ligaments, between which the latter were divided. The right ovary was cystic, and was removed; the left was normal, and was not removed. The uterine arteries were isolated and ligatured about an inch from the uterus. The uterus was then removed by dividing the cervix just above the external os. The remnant of the cervical canal was dilated and cauterized with pure carbolic acid, and the stump was smeared over with the same. The two layers of the broad ligaments were then sutured over the stump of the cervix. Silk sutures and ligatures were used throughout. The abdominal wound was closed with one row of silk sutures. There was no hemorrhage or shock. The time of the operation was one and a quarter hours.

The convalescence was uninterrupted. The patient was discharged well on the twenty-fourth day.

**CASE 2. Sarcoma of the omentum involving the uterus. Hysterectomy. Death.**

June 16, 1895. The patient, a woman, thirty-eight years of age, first noticed a tumor in the lower part of the abdomen ten months ago. It gradually increased in size. Menstruation was not interfered with until six weeks ago, when there was profuse flowing on several occasions, and the patient became much exhausted. Dr. Cushing curetted the uterus, which stopped hemorrhage; but her general condition did not improve, and she continued to have high temperature, weak pulse and great prostration for three weeks. After that time, under digitalis and careful feeding, she improved steadily, and operation was decided upon, and performed June 16th. There was at this time a solid tumor, apparently of the uterus, which extended to a point midway between the umbilicus and the ensiform cartilage.

Operation, June 16, 1895. The tumor was exposed by a median abdominal incision extending upward for five inches from the symphysis pubis. A large tumor, apparently a fibro-myoma of the uterus, extended to a point midway between the umbilicus and the ensiform cartilage. There were extensive adhesions between its surface and the bowel and omentum. While separating the first of these, a piece of the tumor was torn away with it, and it was then seen that the growth was malignant, originating in the omentum behind the uterus and involving the latter secondarily. An alarming hemorrhage resulted from the tearing off of this piece of the tumor, and there was no choice but to remove the uterus as rapidly as possible. This was accordingly done, the adhesions being swept away with a rapid movement of the hand. The neck of the uterus was surrounded by a rubber ligature to control the hemorrhage, which had been excessive. That part of the tumor which lay behind the uterus was then removed piecemeal by the hand. The uterus was transfixed by two pins just above the cervix, and the rubber ligature was drawn tight below them. The patient was by this time moribund from hemorrhage and shock, and died a few minutes later.

The autopsy showed the growth to be a sarcoma of the omentum, extending secondarily to the uterus.

**CASE 3. Multilocular cyst of the ovary. Ovariectomy. Recovery.**

The patient, a young unmarried woman of twenty-five, has a painless, fluctuating, abdominal tumor, which she first noticed three months ago. It is now of the size of the pregnant uterus at the sixth month.

Operation, June 7, 1895. The tumor, exposed by a three-inch median incision below the umbilicus, was a multilocular cyst of the right ovary, without adhesions. The cyst was evacuated. The pedicle was tied with two ligatures of stout braided silk and dropped back into the abdomen. The left ovary showed beginning cystic disease, and was also removed. The abdominal wound was united by a single layer of interrupted silk sutures.

The wound united *per primam*. Uninterrupted convalescence. Discharged well on the nineteenth day, June 26th.

**CASE 4. Cyst of the ovary. Ovariectomy. Recovery.**

The patient, who is fifty-two years old, has noticed an abdominal tumor of moderate size for several



years. It has been painless, and has not inconvenienced her until the last year, during which it has increased rapidly in size. A fluctuating tumor occupies the whole abdomen, extending nearly to the umbilicus.

Operation, September 20, 1895. A large multilocular cyst of the right ovary was exposed by a median incision below the umbilicus. There were no adhesions. The cyst was emptied with a trocar. The pedicle was short and very large. It was tied in five separate divisions with stout silk ligatures and divided.

The tumor weighed forty pounds. The convalescence was uninterrupted. The patient was discharged well on the twenty-fourth day.

CASE 5. Dermoid and simple cysts of the ovary. Ovariectomy. Recovery.

May 20, 1895. Dr. Gay drained a large abdominal cyst containing clear fluid, not removing it owing to the patient's enfeebled condition. The patient rallied, and progressed satisfactorily for a month; the temperature then rose suddenly to 104° F., and she complained of great pain in the region of a second abdominal tumor, which had been noted at the time of the first operation but which had not been attacked. This tumor, which was of the size of a man's head, occupied the right side of the abdomen.

Operation, June 22, 1895. A small, fistulous tract leading down to the tumor from a point midway between the umbilicus and the symphysis pubis, remained from the former operation. An incision five inches long was made through the linea semilunaris over the most prominent part of the tumor. The peritoneum was much thickened, and the tumor was closely adherent to the abdominal parietes. In consequence, it was incised previous to separating the adhesions; and its contents, which were of the usual character of the teratoma (including some bones of the hand and a large mass of long hair) were removed. The cyst wall was brittle, and the adhesions binding it to the intestines and omentum were very dense. Its removal was therefore difficult, but it was finally accomplished successfully. The fistulous tract left by the first operation communicated directly with the cavity left by the removal of the dermoid cyst and was utilized for drainage. The pedicle, which was slender, was tied with one stout silk ligature, divided, and dropped into the abdominal cavity. The abdominal wound was closed with a single layer of interrupted silk sutures.

A fecal discharge appeared in the old fistula on the sixth day and remained one week, when it ceased spontaneously. But for this, the convalescence was uninterrupted. The patient made a rapid gain in weight and strength. The fistula closed on the 3d of September, and the patient was discharged well on the 5th.

CASE 6. Ovarian cyst with twisted pedicle in a patient five months pregnant. Operation. Recovery.

The patient, who is in the fifth month of her second pregnancy, has been suffering from severe and gradually increasing pain in the lower part of the abdomen.

On the left side of the abdomen, between the crest of the ilium and the lower border of the ribs, there is a large, fluctuating, slightly movable tumor, distinct from the pregnant uterus, though attached to it. The patient has been gradually growing weak from disturbed sleep because of the pain, and asks for operation.

Operation, July 15, 1895. A short exploratory in-

cision was made in the median line just below the umbilicus; through this was seen the top of the uterus, which lay two inches below the umbilicus. The tumor extended from the upper left-hand angle of the uterus upward and backward to the kidney. The median incision was left open, and a second incision four inches in length was made through the linea semilunaris. The peritoneum was thickened and adherent over two-thirds of the anterior surface of the tumor. A blood-clot, not of recent formation, about the size of a lemon, was present on the anterior surface of the left Fallopian tube.

The tumor was seen to consist of a much enlarged Fallopian tube and a cyst of the ovary, containing respectively fluid and clotted blood, and cystic fluid. The Fallopian tube was firmly adherent to the sigmoid flexure, and there were numerous other dense adhesions to the intestines and omentum elsewhere. The ovarian cyst which lay beneath the kidney was emptied by trocar and drawn out through the wound; the distended Fallopian tube was found to be twisted upon itself at a distance of two inches from the uterus. The tube was tied off close to the uterus, and removed intact; it was held by numerous adhesions which were for the most part recent; hemorrhage was free while separating them, but was easily controlled by temporary packing. Both abdominal wounds were closed tight with a single line of interrupted sutures.

With the exception of a single stitch-abscess, the convalescence was uninterrupted until the end of the first month, when she had a miscarriage. She was attended by Dr. John Blake, who extricated her from a dangerous condition produced by placenta previa and serious hemorrhage. After this she made a good recovery, and left the hospital on September 5th, well, less than seven weeks after the operation.

The pathologist's report is appended:

"The tumor consists of a cyst of the size of a large orange, of a solid mass the size of an egg, and of a thin, solid mass of the size of a pigeon's egg. Running irregularly over the surface of the cyst for two-thirds of its circumference is the Fallopian tube. A probe passed into the uterine end issued finally at the fimbriated end, which is intimately adherent to the surface of the cyst. The probe does not enter the cavity of the cyst. The terminal two-thirds of the tube is slightly dilated and contains a little blood. The wall of the tube is deeply infiltrated with blood, and the inner surface of the cyst shows several irregular, slightly elevated, dense areas of fibrous tissue. The largest area measures five inches in diameter. The largest solid mass mentioned above consists of firmly clotted blood; the smaller mass consists of fibrous tissue containing great numbers of blood-vessels dilated and filled with clotted blood. The whole tumor mass is covered with numerous fibrous adhesions. Diagnosis: follicular cyst of ovary, hemorrhagic salpingitis and ovaritis, and hemorrhage into the broad ligament."

CASE 7. Purulent salpingitis. Drainage. Recovery.

Operation, July 22, 1895. Forty-eight hours previous to entrance, a large hard mass appeared above Poupart's ligament on the left side. There was marked tenderness in this region. The patient's condition soon became serious. There was a slight cyanosis of the face and extremities. Pulse weak and rapid.

Incision in the median line extending upward from the symphysis pubis. The summit of the empty bladder lay four inches above the symphysis. It escaped injury.

The right Fallopian tube was bound to the pelvic fascia and the ascending colon by dense adhesions; some of them connected the tube intimately with the fascia overlying the iliac vessels. The tube was enlarged to nearly the size of the wrist.

Upon separating adhesions over the posterior surface of the Fallopian tube and broad ligament, a pus cavity was opened, filling the Douglas fossa and ramifying in small compartments among the intestines and mesentery occupying the pelvis.

The peritoneal cavity had been previously protected by pads. The pus cavities were opened and thoroughly swabbed out with peroxide of hydrogen. The attempt to remove the tube was abandoned, owing to the density of the adhesions and its thickened and inflammatory attachment to the uterus. Drainage-tubes were inserted and the wound closed around them.

The patient's condition improved at once, and she left the hospital with the wounds firmly healed seven weeks after the operation.

**CASE 8. Pyo-salpinx.** Tubes and ovaries removed. Death from hemorrhage three weeks after operation.

The patient was well until three months ago, at which time she was married. Shortly afterward she began to have pain in the lower part of the abdomen, and a month ago she noticed a swelling above Poupart's ligament on either side of the symphysis.

Operation, August 18, 1895. The abdomen was opened by a median incision between the symphysis and umbilicus. The patient was then put in the Trendelenburg position. The right tube was distended to the size of the wrist, and closely adherent to the top and front of the uterus. The broad ligament covering it was greatly thickened and closely adherent to some coils of the small intestine. While separating these a large abscess occupying the right side of the pelvis was opened and evacuated. The right tube was removed, its uterine end being tied with a silk ligature. The right ovary could not be found. The left tube was in a similar condition to the right. It was tied off and removed. An extensive abscess occupying the left side of the pelvis was also connected with this tube; it was divided into several compartments by adhesions. These were broken down in order to make one cavity, and this was thoroughly cleansed with peroxide of hydrogen. Glass drainage-tubes were carried down to the bottom of the abscess cavities, and the abdominal wound was sutured around them.

The shock was severe. For the first forty-eight hours the bowels did not move, and there was frequent vomiting and some abdominal distention. A fecal discharge appeared in the wound on the third day, and lasted for one week. The patient, however, made a rapid gain in all other respects. On the eighth day there was a brisk hemorrhage from a point on the right side of and behind the uterus; it was readily controlled by packing. On the twenty-first day after the operation there was a violent hemorrhage, during which the patient died.

**CASE 9. Tuberculous salpingitis.** Removal of both tubes. Recovery.

The patient, a strong, healthy-looking Irish woman about thirty years old, applied to the hospital for relief of sterility which had been present since she was married several years previously. She did not complain of pain or other symptoms. The uterus was retroverted

and fixed. She was referred to the surgical service by Dr. John Blake, after consultation with whom it was decided to perform a ventral fixation of the uterus.

Operation, July 25, 1895. The abdomen was opened by a median incision four inches long between the umbilicus and symphysis pubis.

Both Fallopian tubes were greatly enlarged and tortuous, except for a short distance at their uterine ends, where they were of normal size. The tubes concealed the uterus and were closely bound to its posterior surface by firm adhesions, and to the colon and the pelvic fascia. The uterus was retroverted and bound down to the rectum by dense adhesions, which were so firm that it was impracticable to free and raise the uterus to its normal position, and the attempt was abandoned. Both tubes were removed with much difficulty, owing to the density of the adhesions; the tubes were tied off at the uterine ends with stout silk. The ovaries were not removed. The right tube was slightly torn while separating the adhesions, a small quantity of cheesy material escaping from the rent. The operation was not attended by bleeding or shock. The abdominal wound was closed tight with one layer of silk sutures.

The wound healed by first intention, and recovery was uninterrupted. Examination showed the process in the tubes to be tuberculous.

**CASE 10. Pyo-salpinx.** Both tubes removed. Recovery.

The patient, age twenty-five, has had attacks of severe pain, especially marked during the menstrual periods for three years. The pain was situated in the lower part of the abdomen. Five weeks ago she was seized with violent pain just above Poupart's ligament on the right side. Fever and marked prostration accompanied this attack. A swelling was then noticed in this region. The temperature became normal one day after her admission to the hospital, and the pain was greatly diminished. The uterus was retroflexed, drawn toward the right side, and fixed. Both tubes were felt to be greatly enlarged.

Operation, July 31st. The abdomen was opened in the median line between the symphysis and the umbilicus. The patient was then put in Trendelenburg's position. The transverse colon lay directly across the brim of the pelvis, in front of the uterus and the tubes, to which it was attached by firm adhesions; while separating these, a cavity of the size of two fists was opened. This space was filled with old blood-clots which had issued from the greatly distended left tube and had become encysted between the colon, the broad ligament and the tube. The clots were turned out.

Both tubes were bound by dense adhesions to the uterus, the pelvic fascia, and the colon, and much difficulty was experienced in freeing them; they were tied off close to the uterus. A part of the right ovary was left; the other was removed. Hemorrhage was severe while separating the adhesions, but was controlled by packing. Drainage-tubes were placed in the pelvis through the wound, which was sutured around them. Time of operation one hour and fifteen minutes.

The right tube was distended to nearly the size of the wrist, and contained pus. Midway upon it was a thin-walled cyst, about the size of an egg, filled with recent blood-clot.

The drainage-tubes were removed on the tenth day.

Two days later a slight fecal discharge occurred through the wound; this persisted for a week, then ceased. The abdominal wound was wholly healed six weeks after operation, and the patient was discharged well.

CASE 11. Pyo-salpinx, cystic ovary. Tube and ovary removed. Recovery.

August 8, 1895. Patient, age twenty-three, married, three children. Nine weeks ago pain began in the right iliac region. Pain has persisted for the most part since then. There has been occasional vomiting. There is a tumor filling the right side of the pelvis, moderate tenderness, uterus is fixed.

Operation, August 13th. (Dr. Munro.) Right tube and ovary were enlarged and matted together by an inflammatory process; numerous adhesions to the intestines and the omentum. Adhesions separated; the right tube and ovary were removed; the latter was cystic. Drainage-tubes were inserted and the abdominal wound closed around them. Profuse discharge of pus continued for three weeks, after which it gradually diminished. The discharging sinus healed at the end of two months, and the patient was discharged well.

CASE 12. Tumor of the broad ligament. Removal. Death from septic peritonitis.

A Swedish woman, age thirty-four, in good health, first noticed a hard tumor in the lower part of the abdomen two years ago. It has slowly and painlessly increased in size. There has been no uterine hemorrhage. The tumor extends from the symphysis nearly to the ensiform cartilage; the largest part of it is on the right side of the abdomen. It is solid, and is apparently independent of the uterus. Menstruation has been regular.

Operation, July 4, 1895. The tumor, exposed by an incision in the median line from the symphysis to two inches above the umbilicus, was seen to be a solid, lobulated growth, lying between the layers of the broad ligament on the right side. It filled the pelvis, the lower portion of the abdomen, and reached nearly to the ensiform cartilage.

The broad ligament covering it was freely divided and the tumor shelled out of its bed, numerous bands and large blood-vessels connecting it with the broad ligament being tied with silk ligatures one by one, and divided. Midway in the course of the operation the tumor was expressed spontaneously from the abdominal cavity by the sudden vomiting of the patient. The remaining attachments were rapidly clamped, tied and divided, and the tumor removed *en masse*. The last band divided was the largest, being about three inches in breadth, and only half an inch in length; this band attached it to the uterus and was the pedicle of the tumor. The pedicle was tied in four separate masses by stout silk ligatures, and cut off close to the uterus. It was found necessary to remove the tube and ovary on the same side as the tumor. The large pocket left in the broad ligament after the removal of the tumor was obliterated by a series of lines of sutures, and united over the right side of the uterus. Very little shock attended the operation, and there was almost no hemorrhage. The abdominal wound was completely closed by one layer of silk sutures.

The patient's condition was most satisfactory until the third day, when the temperature rose and vomiting occurred; and she died with symptoms of septic peritoneal infection on the fifth day.

Autopsy showed septic thrombosis of the veins about the stump of the pedicle, and septic peritonitis.

The tumor weighed eight and a half pounds, and measured twenty inches in circumference.

CASE 13. Exploratory laparotomy. Hypertrophy of the liver. Wound closed. Recovery.

The patient, a strong healthy-looking French woman, about thirty-five years old, had suffered from obscure abdominal symptoms for three years, the chief of which was a dull pain in the right hypochondrium, in which region there is a large, solid-feeling, somewhat movable tumor, extending from the lower border of the right lobe of the liver nearly to the crest of the ilium. This mass presents a smooth surface, and an elastic sense to the fingers. It was thought to be a distended gall-bladder, in all probability, and exploratory laparotomy was advised.

The operation was performed in June, 1895, by a short incision through the right linea semilunaris over the most prominent part of the tumor. The much enlarged liver was at once exposed, and was seen to represent the tumor. Examination failed to show malignant, tubercular, or any other disease, except a great and almost uniform enlargement of the organ.

The wound was closed, and the patient made an uninterrupted recovery, leaving the hospital four weeks after the operation.

CASE 14. Psoas abscess. Exploratory laparotomy. Subsequent opening of the abscess extra-peritoneally. Recovery. (Second operation by Dr. John Munro.)

The patient, a woman about thirty-five years old, had been suffering for five months previously with dull pain in the left iliac fossa. One month before she came under surgical treatment there was an ill-defined swelling to be felt in that region, which, however, had diminished, and was scarcely to be felt at date of entrance to the surgical service on bimanual examination between the vagina and abdominal wall. The patient had lost flesh and strength and had slight hectic.

An exploratory abdominal incision was made, but nothing was found to account for the symptoms. The wound healed *per primam*, and the patient had no trouble from the operation.

Six weeks later Dr. Munro detected a psoas abscess in the left iliac region. The patient was again etherized, and incision was made above and parallel to Poupart's ligament. The peritoneum was pushed upward, and the abscess was opened outside and beneath it. The patient made an excellent recovery; the abscess, which was drained, ceased to discharge at the end of a month, and the drainage channel closed a few days later. The patient was discharged free from all symptoms six weeks after operation.

CASE 15. Exploratory laparotomy. Tuberculous peritonitis. Death two months afterward.

The patient is a young girl, about twenty years of age, in good health until two years ago, when she began to have irregular action of the bowels, and more or less frequent attacks of pain in the abdomen. These pains were not definitely localized, but general throughout the abdomen.

During the last year there has been a gradual loss of strength, weight and appetite; the pain, however, has become much less, and is now insignificant. She was much emaciated, and very weak on entering the hospital.

The abdomen is retracted; its walls are tense; and

the impression of a thickened, infiltrated omentum is given to the fingers on palpation.

In June, 1895, the abdomen was opened in the median line below the umbilicus. The peritoneum was greatly thickened; the omentum and loops of the intestines were adherent in many places to the parietal peritoneum and to each other; and the abdominal cavity was separated, in consequence, into numerous compartments, most of which contained cheesy masses and fluid pus. These compartments were, as far as practicable, opened into each other, and cleansed with peroxide of hydrogen. The surface of the peritoneum was universally studded with tubercles. The abdomen was freely drained by means of glass tubes.

The patient made a good recovery from the operation, but gradually sank, and died from exhaustion two months later.

CASE 16. Strangulated inguinal hernia. Operation for radical cure. Recovery.

The patient, a young man twenty-eight years old, has had a right inguinal hernia for two years. Two days ago it became strangulated.

Operation, September 16, 1895. The sac was exposed at its entrance to the outer ring, and was opened. The canal was slit up as far as the inner ring. The bowel was dark purple. The sac was adherent to the scrotal tissues and to the ring. It was freed from its adhesions. The bowel was replaced in the peritoneal cavity. The sac was then treated by the method of Macewen. The cord was transplanted subcutaneously, the pillars of the ring were united beneath it, and the wound was closed. Silkworm gut was used throughout.

The patient made an uninterrupted recovery.

CASE 17. Inguinal hernia. Radical operation. Sac treated by Macewen's method. Cord transplanted.

The patient, age forty, has had for seven years a large, left, inguinal hernia, which has been irreducible for two years. The ring admits easily the tips of two fingers.

Operation, September 20, 1895. Macewen's operation was done, with the addition of transplantation of the cord subcutaneously. The sac was universally adherent and somewhat thickened.

On the next day bronchitis developed, which persisted for a fortnight. On the fourth day the wound suppurated; infection apparently took place from silkworm-gut sutures and ligatures which were used throughout the operation.

On October 17th healing of the wound by granulation was nearly complete. The ring was wholly occluded by a firm plug of connective tissue, and the sac.

On October 30th, the wound was healed, and the patient discharged well.

CASE 18. Inguinal hernia. Radical operation, Macewen's method, and subcutaneous transplantation of the cord. Recovery.

The patient, thirty-nine years old, has had a small, easily reducible, inguinal hernia on the right side for six months.

Operation, September 27, 1895. The inguinal canal was laid open to a point just above the inner ring. A thin-walled, empty sac was separated from its adhesions, which were extensive, and was fixed above the level of the inner ring after the method of Macewen. The cord was transplanted beneath the skin. The underlying fascia were then inverted and rolled into a firm cord, after the

manner recommended by Ferguson, of Chicago, as described in one of the foregoing cases; and finally the pillars of the ring were sutured above this cord. Silkworm gut was used throughout.

On the second day the patient developed a bronchitis, which lasted a week.

The wound united by first intention; but on the fourteenth day an abscess, originating in one of the deep sutures, appeared at the upper angle of the wound, and a sinus has persisted up to the present time, namely, five months after the operation. The patient is about to undergo an operation for its closure. The inguinal canal is occupied by a firm plug and there is, so far as the hernia is concerned, a perfectly successful result up to the present time.

CASE 19. Right inguinal hernia. Operation for radical cure by Ferguson's method, as described in the *Annals of Surgery*, June, 1895. Recovery.

The patient, a male, age fifty-one, has had a right inguinal hernia for two years. The hernia is reducible. The ring admits two fingers.

Operation, June 17, 1895. The sac, which was empty, moderately thickened and firmly adherent to the scrotal and inguinal tissues throughout, was exposed at the ring (which was freely divided), freed from its adhesions, and fixed within the inner ring after the method of Macewen; and the operation was completed according to the recently suggested method of Ferguson, referred to above. The cord was transplanted to a subcutaneous position. The sac was fixed by kangaroo tendon; the pillars of the ring were closed with the same material; and the skin wound being brought over so as to cover these sutures completely, was united by a buried silk suture.

The wound united *per primam*. The patient had an attack of subacute bronchitis during the first week after the operation; with this exception his convalescence was uninterrupted. He left the hospital July 10th, well, and with the inguinal canal firmly plugged and obliterated.

CASE 20. Incarcerated femoral hernia. Operation. Recovery.

Seven years ago the patient was relieved of a strangulated femoral hernia by resection of the intestine by Dr. H. H. A. Beach at the Massachusetts General Hospital. She wore a truss for two years, but has neglected to do so since then. She had no trouble until two weeks ago, when she had pain in the left inguinal region, obstipation, and for the last three days vomiting, which is now almost constant. There is a small, hard, irreducible hernia in left femoral opening.

Operation, July 2, 1895. The femoral ring being exposed, the sac was found thickened and was bound to the ring and to the abdominal wall to a distance of two inches above it by dense adhesions. The gut was in good condition, and was not constricted by the ring. The sac was then opened, and was found to be closely adherent to the bowel throughout as far as an inch above the femoral opening. The ring was enlarged, and the sac was separated from the ring without and the intestine within it, without injury, though with much difficulty. The bowel was then returned, and the operation was completed after the method of Macewen.

There was a small stitch-abscess during the first week after the operation, otherwise the convalescence was uninterrupted. She left the hospital one month after the operation.

**CASE 21.** Strangulated umbilical hernia. Recovery.

August 18, 1895. Female, age thirty-five years, five months pregnant. Obstipation for one week. There has been a tumor at the umbilicus for the same period, the patient having omitted to wear a truss for umbilical hernia on account of her pregnancy. The hernia appeared for the first time two years ago. This attack began suddenly with intense pain in the umbilicus.

Operation, August 18th. (Dr. Monks.) The sac of the hernia was opened by a three-inch incision in the median line. It contained a loop of intestine four inches long, which was deeply congested and of a dark color; the color improved, however, upon dividing the constriction, and the bowel was in consequence returned to the abdominal cavity. The edges of the constriction were refreshed, the redundant sac was reduced by cutting away a part of it, and the wound was closed tight with silkworm-gut sutures.

The patient made an uninterrupted recovery, and left the hospital at the end of three weeks.

**CASE 22.** Sarcoma of the omentum and mesentery, involving the cecum and the small intestine. Resection of the cecum and a part of the small intestine. Death forty-eight hours later.

The patient, a large, healthy, Irish woman, thirty-two years old, first noticed a tumor in the lower part of the abdomen on the right side about nine months ago. The growth slowly increased in size. There was no pain until three weeks ago, when she had a sudden and severe attack in the right iliac fossa. This pain, though still present, is less than it has been. There has been no disturbance of the bowels. She has not lost strength, and her general condition was good when she entered the hospital. Temperature 101° F.

A large, hard, slightly movable tumor occupies the right side of the abdomen, extending from a little way above Poupart's ligament nearly to the free border of the ribs. It is evidently adherent to the abdominal parietes anteriorly in its lower portion.

Operation, July 11, 1895. A vertical incision through the linea semilunaris exposed the greatly thickened and firmly adherent peritoneum covering the tumor. Upon dividing the peritoneum in the region of the cecum, a large pus cavity was entered; behind this, lay another, communicating with it by a narrow orifice. Upon evacuating the second abscess it was seen to communicate directly with the cecum through two perforations in the latter, each of the size of a quarter of a dollar.

A large, irregular, lobulated, solid tumor extended upward from the cecal region to the level of the kidney, involving the cecum and first part of the colon, the last four inches of the small intestine, and matting together the mesentery and omentum along the ascending colon.

The patient's general condition was so good that it was thought justifiable to attempt the removal of the mass, which microscopic examination showed to be spindle-cell sarcoma.

Six inches of the small intestine, the cecum, and a small part of the ascending colon were resected; and the end of the small intestine was united to the end of the ascending colon, the latter's calibre having first been lessened so that the two divided ends would fit accurately. The larger part of the rest of the tumor was then removed by the fingers, after tying off the

adhesions and connections with the omentum and the mesentery. The whole mass, however, could not be removed on account of the extent of some of the adhesions and the tissues involved, and because of the critical condition of the patient, who suddenly developed symptoms of collapse. The abdominal wound was closed, except at its lower end, which was left open for drainage.

The patient succumbed forty-eight hours after the operation from the shock from which she never fully rallied.

Autopsy showed that the growth originated in the greater omentum. It was a spindle-cell sarcoma.

## Clinical Department.

### A CASE OF IDEATIONAL SADISM (SEXUAL PERVERSION).

BY MORTON PRINCE, M.D.,

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By Sadism is meant the association of active cruelty and violence with lust. By this association the performance of an act which is repulsive to the ordinary person, such as the infliction of torture or pain, the shedding of blood, the tearing of flesh, etc., directly excites intense lustful feelings in the individual. The name is derived from the "notorious Marquis de Sade, whose obscene novels treated of lust and cruelty." This perversion of the sexual instinct is the exciting motive of many notorious murders. The Whitechapel murderer was undoubtedly the subject of Sadism. Similar instances are well known and may be found described in the literature. The subject is an important one from a medico-legal point of view, as well as of psychological interest; and it is desirable that the motives leading to crimes of this kind should be thoroughly recognized. Lust murders, not murders for the purpose of concealing or committing rape, but violence and murder for the purpose of inducing sexual excitement in the murderer, are probably more common than is generally supposed. The sexually exciting element in such cases, is the sight or smell of blood, or the cutting, tearing or mutilation of the victim's flesh. Verzeni found, as he confessed, unspeakable delight in strangling women, experiencing during the act erections and real sexual pleasure. Some find delight in actually eating the flesh or drinking the blood (Leger, Verzeni<sup>1</sup>). Sometimes special pleasure is found in cutting or tearing out the uterus, ovaries and genitalia which are carried away (Whitechapel murderer), but this is not always the case, and the victims are not mutilated in this respect.

A similar perversion is found in the excitement which some have in harmlessly cutting, beating or whipping women and boys. A case has been brought to my attention of a man who was in the habit of visiting a prostitute whom he used to strike over the nates with a shingle. No coitus was indulged in.

In the following case, for the observation of which I am indebted to Dr. Harold Williams, with whom I saw the boy in consultation, the sexual perversion was fortunately not gratified by actual violence, but was limited to the excitement which the subject intentionally induced in himself by dreams and probably

<sup>1</sup> Krafft-Ebing.

hallucinations of violence and murder. The association was between lust on the one hand and volitionally induced hallucinations of murder and mutilation of women on the other. Hence it might be called ideational Sadism. The case is, I think, unique in this respect. It only needed perhaps, the opportunity, perhaps a sudden impulse or thought to convert this embryo Sadist into an actual murderer. That such possibilities made him dangerous to the community is self-evident.

The subject was a young man, twenty-two years of age. When I saw him this sexual perversion was unsuspected, nor were the other symptoms of insanity clearly recognized by the family. His condition had been regarded (before coming into Dr. Williams's hands) as one of neurasthenia or hysteria. The diagnosis of some near relatives had been general laziness, with the usual corresponding advice to the mother, who recognized in a general way that the boy was not right. The fact that the boy had concealed his mental condition so long is noteworthy. After considerable difficulty I obtained a complete confession.

It was his custom to lie upon the bed in the daytime and fall into a sort of trance or day-dream state in which he was apparently between waking and sleeping. He said he thought he was awake because if any one should knock on the door or come into the room he would know it. While in this state he used to imagine that he killed and mutilated women. It was not possible to learn from him the exact mode in which this habit began, or what was the original exciting occasion, but his imagination began in a moderate way and afterwards extended. At first, it was only a single woman whom he imagined he thus mutilated, but afterwards in each "séance" he destroyed great numbers. His imagination seems to have created actual hallucinations, for he said that at these times he actually saw his victims with great vividness as objective realities, and had the sensations of actually killing them; for the time being his acts were absolutely real to him, and soon a belief in them persisted.

At first it was a single girl whom he mutilated; he killed her, tore her to pieces and ate her; later he imagined that he lived in towns where it was the custom for the men to destroy all the women in this way. Then, as the habit grew, the towns became cities and the cities countries. These countries were completely depopulated of the women by the men, all of whom together held these Sadistic feasts.

While indulging in these dreams or hallucinations, he had most intense sexual excitement with emissions. His habit was thus a form of masturbation, the peculiarity being the association of sexual feeling with hallucinations of cruelty. When in the waking state he seemed to be at times confused as to whether he actually committed these imaginary murders or not; for while at one time he said he had not, at other times there was sufficient confusion in his mind to make him think that he had committed these unpardonable sins and to be in great misery in consequence; he would then be in a state of great penitence which was not understood by his mother until this confession was obtained. He also admitted to me that at times he thought he had actually committed these acts. He had practised this habit from the time he was ten years old until about twenty, that is, up to about two or three years ago. During the last two years this

habit had largely died out but there has been of late (September, 1895) a tendency to recurrence. It was apparent that such a person was dangerous to the community and that at any time there was a possibility, under favorable conditions, that he might put what had hitherto been pure imagination into actual practice; we therefore sent him to an asylum without delay. He denied that in mutilating the bodies of his victims that he selected any particular parts of the body, as is the case with many Sadists.

Besides these perverted sexual tendencies there were other mental and physical phenomena of interest which showed that his mental condition was one of degeneration. He had practised masturbation frequently in the ordinary way. It was very difficult, at first, to obtain from him a statement of his feelings and thoughts; he became very easily tired and exhausted when interrogated, and every few minutes, when a question was put to him he would remain silent and make no attempt to answer; when asked why he did not answer he professed not to hear the question or at least not to hear it intelligently but merely as sounds which conveyed no meaning to his mind (word deafness?); at first I thought this a subterfuge to avoid answering pointed questions, but afterwards I became satisfied that it was a fact; for every few minutes he would go into a semi-trance-like state of only a few seconds' duration when he seemed to be in a condition much like that of *petit mal*. In these states he seemed to be no longer in association with the outer world but given over to a sort of union with an inner consciousness. Questions put to him at that time were not understood, but after a moment's silence he would say, "I did not hear that."

These momentary trance-like states increased in frequency as the interview was prolonged, until at the end of an hour it was impossible to carry the examination further. He then became very much fatigued and was obliged to lie down. The explanation of them I soon learned to be as follows: He thought there was an evil being or demon inside of him, and with this being he was continually contending. This evil one was trying to get control of him, and it was he who was urging him to do all sorts of things that he did not want to do; and when he did such things it was the evil one, not he, who did them. He was confused regarding the character of this person; but he, the evil being, was without sentiment, pity or feeling; his sole desire was to do him injury. When the patient did any wrongful act it was the being that was responsible, but as yet this being had not got absolute control of him. The boy said that he was losing his control over his demon, and was afraid he would be eventually overpowered. The ideas of the patient regarding the relations of this demon to himself were not clear, but confused, as were also his notions regarding his own ideas and those of the demon; it was difficult for him to distinguish what were his and what were the demon's, and even to clearly define his own notions in a logical way. When I asked him what he thought was the matter with himself, whether he had any particular hallucinations, fixed ideas, or mental impulses, he said he did not know, he could not remember; this evil one had them, not he; he was willing to tell if he could, but he knew nothing. He heard a voice at times, but was not quite certain whether the voice was that of the evil one speaking to him or the voice of a third person was speaking to the evil one as a separate



person. On one occasion, ten days before my first interview, he heard a voice saying it was his duty to God to kill his mother; then he broke off all relation with this being. When I asked whether he was not afraid that this being would compel him to do some wrong act, he answered, "No," because when the demon went too far he broke off all relation with him and had nothing to do with him, and in this way felt himself safe. Now it was when he went into the above-described trance-like states, when he did not hear me, that he entered into communication with the evil one. At such times, he said the room seemed to become slightly darker, or rather he saw a sort of dark object, which was the evil one between him and the light; then, he said he "poked and jabbed this demon." This seemed to be a way of punishing him. I noticed at such times his eyelids blinked or quivered continuously and a sense of exhaustion came over him. When this state passed off he would say, "There, I jabbed him." When I asked him if this demon was a real person or only a figure of speech, he found difficulty in explaining, but said it was his "environment." He evidently had no clear conception of this person.

Another perverted idea of the patient was that he was turned inside out.

His general condition was one of neurasthenia. He had much depression and suffered from great anguish of mind from which he broke down and cried at times, saying that he "suffered intensely," but could not describe very definitely from what particular feelings; it seemed to be more an anguish of mind.

His heredity is bad, and throws light upon the distinctively degenerate character of his mental condition. His mother was excessively neurasthenic. One maternal aunt was described as nervous, with abnormally fixed ideas on certain social subjects, and two maternal aunts suffered from hysteria. A maternal brother was delicate and always on the point of breaking down. His maternal grandfather was a very able and physically strong man, with decided elements of genius. He is well known to the public, and recognized to be very brilliant mentally, but a man of very extreme opinions. Up to the age of forty he had a tendency to melancholia. The maternal grandmother was neuralgic, ailing, neurasthenic. The patient's father was eccentric and a dipsomaniac. One paternal aunt was well; a second was described as having a bad temper and at one time as having had delirium (about this my notes are confused). A third had hysteria. Two cousins, sons of the second paternal aunt, both drank to excess. The first paternal aunt had four children; of these, one had some sort of puerperal insanity, from which she recovered. Two paternal uncles are said to have died of dissipation.

The early history of this patient is interesting, as showing the progressive physical descent (*facilis descensus averni*) of such a case. Since two years of age always more or less out of order; five years of age, attacks of nausea, vomiting and headache with fever, delirium alternating with coma; these attacks were followed by excessive prostration and weakness; slow recovery from weakness which persisted until the next attack, which occurred at the end of about one month; he lost flesh and his temper became irritable, so that he became violently excited and enraged over little things.

Several eminent physicians of New York were consulted. One said that he was unable to make a diag-

nosis. A second said it was brain disease; and a third said it was lithemia from the liver. Accordingly he was treated, for this last, with calomel, with the apparent results that after this he had no more attacks but only premonitory signs which were always stopped by calomel.

The patient was then taken from New York to the seaside. He is said to have always become ill whenever taken back to New York, that is, lost flesh and color and looked sick; became well again when taken back to the seaside; accordingly experiments of living in different parts of the country in search of health during his boyhood were tried. He has always been unable to study any length of time, fifteen minutes having been the longest time during which he has been able to concentrate his thoughts; if he studies for a longer time at one stretch he becomes pale, and it is evident something is wrong with him.

At twelve years of age he went to school; at first he was well, then went down hill but did good work. In the spring he became ill, so that finally, after numerous attempts, school was given up and he went back to the seashore, where he became strong and rugged. Five years ago he passed his preliminary examinations for the Institute of Technology, having in spite of the above difficulties for the most part educated himself. Four years ago a trip was made to Europe; this was a failure. Relatives strongly advised his being put into business, so three years ago he went to California on a ranch; there became melancholy, inert and unequal to the physical exertion necessary; he was obliged to give up the ranch and went to the Pacific Coast, where he sailed all the time and became better. Then he tried looking after his property as an occupation, but found the necessary mental exertion too exhausting. Then in the summer of 1893, upon the advice of relatives, who insisted that his whole trouble was merely indolence, he went into a newspaper office, where he again broke down.

In the autumn of 1893 he went to Florida, where he improved; but the following Christmas he broke down, and has been ill ever since with periods of intermission when he is comparatively better and has fair health. Further, his mother states she noticed his personality has changed, which is manifest in his voice, manner of speech and actions. He has giddy turns and his mind becomes possessed with thoughts he cannot direct.

In the spring of 1894 his mother said "he wanted to attack people," a bell-boy, for example, in the hotel. In the spring of 1895, while in Europe, he had a strong desire for suicide, fell into fits of deep depression of days' and weeks' duration. His present condition, as observed by the mother (in September, 1895), was one of depression, debility, languor, slowness of hearing and speech and mental action, inertia and lack of interest in everything. He has told her that he has committed a great sin and that he is going crazy. This refers to the hallucinations of Sadism; further particulars he did not confess.

Certain physical stigmata can be recognized. He is of average physical development, but there is an asymmetry in the two sides of the face, that is, the muscles of one side move more energetically than those of the other so that when he smiles the mouth is drawn more to the right. The vault of the pharynx is high. The fingers do not show what some writers claim to be the relative proper development, some being too short.



**SEVEN CASES OF ACUTE POISONING CAUSED BY EATING THE LIVER (AND HEART?) OF A SWORD-FISH.**

BY CHARLES E. MORROW, M.D., GLOUCESTER, MASS.

On the 31st of July, 1896, the crew of the Schooner —, while fishing on La Have fishing banks, off the coast of Nova Scotia, caught on their trawls a sword-fish; some one remarked that the liver and heart were "good eating"; and accordingly they were sliced and fried, and eaten with a gravy composed of onions and a few other ingredients. It proved to be a very palatable dish, and was partaken of in various amounts by seven of the crew, the other eight preferring to abstain from it.

Soon after they had finished eating, nausea was experienced, and in three or four hours all seven vomited; they now took Epsom salts, and because of that or the food, or both, free purging supervened; following this there set in an intense headache, which lasted several hours, during which time only they were confined to their beds.

On the next day there appeared upon the body a dry papular eruption, which appeared most numerous upon the trunk, there being few papules on the lower extremities and those mostly about the patellæ.

On the third day desquamation began; the thick epidermis on the palmar surface of the hand came off in large pieces leaving the hands pink, soft and tender; over the scalp exfoliation was complete, but the hair was not injured; desquamation extended over the body, but was scarcely noticeable in some areas.

The severity of the symptoms seemed to be in proportion to the amount of the food eaten, those who had partaken most freely being most affected.

While the flesh of the sword-fish is eaten without injurious results, I have been unable to find any other instance where the liver has been eaten, by means of which it could be determined whether the peculiar effects upon the skin are constant, or due, in these cases, to a diseased condition of this particular liver, or to the large amount which some of them, at least, had eaten.

**Reports of Societies.****AMERICAN PEDIATRIC SOCIETY.**

EIGHTH ANNUAL MEETING, MONTREAL, CAN., MAY 25, 26, 27, 1896.

OWING to the unavoidable absence of the president, DR. JOSEPH O'DWYER, the Chair was occupied by DR. JAMES C. WILSON, of Philadelphia.

The first session was opened by the reading of the President's address, entitled

**THE EVOLUTION OF INTUBATION.**

This was prepared at the request of the Council, and was a paper of the greatest interest, as it described the labors which Dr. O'Dwyer pursued with untiring devotion to a great idea through five long years. A bivalve tube was first used, but after three years of continuous effort it was abandoned, and experiments were begun with the solid tube. The paper described the various experiments made with alternating failure and success, until at last obstacle after obstacle was overcome and imperfection after imperfection was re-

moved. As a result of this patient toil, perfected instruments were given to the profession—a very rare thing in the history of medicine. The various steps taken in accomplishing this great result were narrated with the simplicity and modesty which has always characterized the work of Dr. O'Dwyer. A complete set of instruments, showing the evolution of intubation from the first bivalve tube to the present perfected model, proved of the utmost interest.

DR. GEORGE N. ACKER, of Washington, read the first paper, entitled

**GANGRENE OF THE LUNG FOLLOWING TYPHOID FEVER.**

DR. J. H. FRUITNIGHT, New York, read a paper on

**MALIGNANT ENDOCARDITIS,**

and presented a specimen. As the bacteriological examination showed the condition to be due to the presence of streptococci, the author advocated the use of streptococcus antitoxin serum in such cases.

At the second session, DR. A. H. WENTWORTH, of Boston, read a most exhaustive paper on

**LUMBAR PUNCTURE,<sup>1</sup>**

and reported 29 cases. He affirmed that while normal cerebro-spinal fluid contains neither fibrin nor cells and is always clear, it is always cloudy in case of meningitis, though the cloudiness is sometimes very slight. This is caused by cells, the character of the cells differing with the variety of meningitis. The operation, the author believes, offers a valuable means of differential diagnosis. For such purpose, however, the microscope is essential, and inoculation experiments are also of value.

This was followed by a paper on

**TAPPING THE VERTEBRAL CANAL,**

with remarks on local treatment for tubercular meningitis, by DR. AUGUSTUS CAILLÉ, of New York.

He reported 21 cases, and believed that a study of the cases reported up to the present time will certainly convince the most sceptical that Quincke's puncture is of positive value as a method of diagnosis. It is simple and usually of easy performance. In two cases Dr. Caillé injected antiseptics into the subarachnoid space, but without material results. He proposes in some future case to lay bare the dura by removing a button of bone and irrigating from a lumbar puncture upward through an opening in the dura.

DR. C. C. JENNINGS, of Detroit, also read a valuable paper on

**LUMBAR PUNCTURE,**

and reported practical experience.

DR. FLOYD M. CRANDALL, of New York, read a paper on

**THE OCCURRENCE OF INFLUENZA IN CHILDREN,** and reported local epidemics.

DR. SAMUEL S. ADAMS, of Washington, reported an extremely interesting case of

**TEMPORARY INSANITY FOLLOWING TYPHOID FEVER.**

DR. FREDERICK A. PACKARD, of Philadelphia, reported a case of

**ENDOTHELIOMA OF THE BRAIN WITH ATROPHY OF THE PARALYZED MEMBERS.**

<sup>1</sup> See page 132 of the Journal.

DR. HENRY JACKSON, of Boston, read a paper on

#### NASAL FEEDING IN DIPHTHERIA,

in which he advocated feeding by means of a soft tube passed through the nose into the esophagus in certain cases of diphtheria. As this can be done with ease, it does much in preventing exhaustion of the child's strength.

DR. WILLIAM OSLER, of Baltimore, read a paper on  
THE CLASSIFICATION OF TICS OR HABIT MOVEMENTS.

He made the following classification: (1) Simple tic, or habit spasm. (2) Tics with superadded psychical phenomena — *maladie de la tic convulsif*, or Gilles de la Tourette's disease. (3) Complex co-ordinate tics. (4) Tic psychique. An imperative idea is the psychical equivalent of, and has an origin similar to the motor tics. Each of these subdivisions was elaborated, and illustrated by practical examples.

The third session was devoted to the

#### ANTITOXIN TREATMENT OF DIPHTHERIA.

The report of the Collective Investigation Committee of the Society upon the results of the antitoxin treatment in private practice was read. Over five thousand cases were reported, the results being, on the whole, far more favorable than any extended reports that have thus far appeared.

DR. F. A. PACKARD reported favorable results of the antitoxin treatment, and DR. S. S. ADAMS read a paper giving the comparative results of the treatment of diphtheria, with and without antitoxin, in the District of Columbia. It appears that the death-rate from diphtheria in the District of Columbia since the introduction of antitoxin has materially diminished.

DR. A. SEIBERT, of New York, in a paper treating of sudden death after antitoxin injections, reported a series of striking experiments, which showed that the injection into animals of carbolic acid, even in very weak solution, was constantly followed by most characteristic spasmodic movements. Another series of experiments was made to determine the effects of subcutaneous injections of air. The results seemed to show that antitoxin can contain but infinitesimal quantities of carbolic acid. They also rendered the proposition reasonable, that the few sudden deaths reported after the use of antitoxin might be due to the injection of air at the same time.

The general discussion elicited by these papers was extremely interesting, and showed a unanimous and very strong sentiment in favor of antitoxin.

At the fourth session, DR. ROWLAND G. FREEMAN, of New York, read a paper on

#### LOW-TEMPERATURE PASTEURIZATION OF MILK.

He proved that this temperature (about 67° C.) was sufficient to kill numerous pathogenic bacteria and various atmospheric bacteria, and referred to the importance of avoiding unnecessary heat in the preparation of milk for infants' use. He presented a new apparatus of simple construction, designed to Pasteurize milk at 67° C.

DR. C. W. TOWNSEND, of Boston, reported several cases of

#### THIGH-FRICTION IN INFANTS.

DR. WILLIAM P. NORTHRUP, of New York, reported a most interesting case of

#### APPARENTLY RELAPSING CEREBRO-SPINAL MENINGITIS,

followed by death and autopsy, which elicited a warm discussion on the pathology and diagnosis of meningitis.

DR. H. LAFLEUR, of Montreal, reported a case of  
INSOLATION IN AN INFANT OF THIRTEEN MONTHS.

DR. A. D. BLACKADER, of Montreal, reported a case of

ENLARGEMENT OF THE LIVER IN A YOUNG CHILD, with symptoms much like those of typhoid fever.

Papers were read by title by Drs. B. K. RACHFORD, of Cincinnati; F. FORCHHEIMER, of Cincinnati; IRVING M. SNOW, of Buffalo, and HENRY D. CHAPIN, of New York.

The last session was devoted to the presentation of

#### PATHOLOGICAL SPECIMENS,

specimens being presented by Drs. ROTCH, HOLT, CAILLÉ, ADAMS, PACKARD, ACKER, FREEMAN and TOWNSEND.

The following officers were elected for the coming year: President, Dr. Samuel S. Adams, Washington, D. C.; First Vice-President, Dr. W. S. Christopher, Chicago; Second Vice-President, Dr. Charles P. Putnam, Boston; Secretary, Dr. Frederick A. Packard, Philadelphia; Treasurer, Dr. Charles W. Townsend, Boston; Recorder and Editor, Dr. Floyd M. Crandall, New York; Member of Council, Dr. William Osler, Baltimore; Chairman of Council, Dr. William P. Northrup, New York.

### Recent Literature.

*Don'ts for Consumptives; or, The Scientific Management of Pulmonary Tuberculosis.* How the Pulmonary Invalid may Make and Maintain a Modern Sanitarium of his Home, with additional chapters descriptive of How Every Consumptive Person may Apply the Forces of Nature to Assist and Hasten Recovery, and also, How the Defects of Heredity may be Best Overcome. By CHARLES WILSON INGRAHAM, M.D., Binghamton, N. Y., February, 1896. *The Call*, Binghamton.

The book is dedicated to the advancement of self-study among pulmonary invalids, and the promotion of public information upon the subject of tuberculosis; and in the dedication and the title-page the object of the author is sufficiently clearly explained. He has written more for the instruction of the patient than for the physician, and in language which the lay reader can readily understand describes the course (hygienic, dietetic, etc.) which the former should follow in order to facilitate his recovery and the precautions which he should take to prevent the spread of the infection; but his directions that the patient should take his own pulse and temperature seven times a day may be criticised as advancing self-study too far in many cases, and as liable to do more harm than good, especially when they are coupled with explanations of the prognostic significance of a high temperature and a rapid pulse.

The book suffers somewhat from an unfortunate title, and decidedly from the quality of the press-work.

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NEW YORK DURING THE HOT WEEK.

THE long-continued term of extreme heat has resulted in an enormous increase in the mortality of the city for the week ending August 15th. The official report of Dr. Roger S. Tracy, Registrar of Vital Statistics, shows that during the week there were 1,810 deaths, and of these no less than 651 were due to sunstroke. The death-rate was swollen to 48.65 per thousand of the estimated population, and this is the largest for one week yet recorded in the vital statistics of New York. The extremely fatal effect of long-continued hot weather is strikingly shown by the fact that in the week preceding (that ending August 8th), which embraced the first half of the period of extreme heat, the number of deaths recorded was only 809. This represents a death-rate of but 21.76, which is really lower than the average annual death-rate of the city.

The number of deaths due directly to the effects of the heat, 651, is far in excess of that recorded in any other similar period of excessive heat. In the hot spells of 1872 and 1892, in which the mortality was the largest, the number of deaths from this cause was respectively 212 and 213.

One peculiarity of the mortality of the late heated term is the exceptional fatality among adults and the comparative immunity of infants and young children. During the week ending August 15th (with a total mortality of 1,810), the number of deaths among children under five years of age was 552, which is only 164 more than in the preceding week, when the total number of deaths was 809 (fully 1,000 less than in the week ending August 15th). The number of deaths in children under one year was 391, of which 139 were from diarrheal diseases. In the hot spell of 1872, when the total mortality was 1,591, no less than 733 were in children under one year, and of these, fully 300 died from diarrheal diseases. In that of 1892, when the total mortality of the city was 1,615, 603 deaths were in children under one year, and of these,

293 died of diarrheal diseases. The causes for this diminished mortality among infants and young children, there can be little doubt, are those assigned for the exceptionally favorable statistics of the month of July mentioned in the recent communication of the President of the Board of Health, as given in the JOURNAL of August 13th. Again, a vast number of those who died from the effects of the recent heat were between the ages of twenty and thirty-five years, while in former seasons most of the victims among adults were elderly people.

The mortality among horses was also unprecedentedly large. More than a thousand are said to have perished, and the number of carcasses accumulated so rapidly that it was very difficult for the authorities to get them removed from the streets before decomposition had advanced to a very uncomfortable state.

During the week the coroners and their physicians, as well as the staffs of all the general hospitals, were almost overwhelmed by the amount of extra work thrown upon them. The police surgeons also had their hands very full, and the number of members of the police force on the sick-list is said to have been larger than at any time in the history of the city except once when an epidemic of influenza was at its height. At the hospitals the number of ambulances was totally inadequate to answer all the calls and police-patrol wagons and other vehicles had to be pressed into the service. At Bellevue Hospital many of the physicians and nurses had to work uninterruptedly for thirty-six hours at a time, and then could get only three or four hours for rest. In this emergency the Sturgis pavilion, which is used in winter as a convalescent ward, and which was closed and being repaired, was promptly re-opened. Six ice-baths were placed in it for the treatment of cases of sunstroke, and twelve trained nurses were added to the regular force. In five days no less than 554 new patients were received at Bellevue.

As the heated term went on and the mortality of the city began to increase alarmingly, the public authorities adopted various unusual measures which were no doubt of great service, but would have been even more beneficial if they could have been begun earlier. Thus, the Board of Estimate and Apportionment made a special appropriation in order that free ice might be distributed to the poor from the various police station-houses. At first 93 tons a day were given out, but afterwards this amount was increased to 150 tons a day. The hours of work for the employees of the Street Cleaning Department were changed so that the men were on duty only from 3 to 6 A. M. and this Department united with that of Public Works in thoroughly flushing the streets of the crowded tenement-house districts every evening by means of hose attached to the fire-plugs. The public baths were kept open continuously both day and night, and permission was finally given that people could sleep in the parks. Before this was done quite a number of persons were killed or seriously injured by falling from roofs or

fire-escapes on which they were sleeping. A bird's-eye view of New York roofs during the nights of the latter part of that hot week presented an extraordinary spectacle.

#### EXPERIMENTAL PRODUCTION OF BLENNORRHAGIA BY PURE CULTURES OF THE GONOCOCCUS.

It is known that thus far all attempts to infect animals with Neisser's gonococcus have failed. Heller, of Berlin, reports that he has recently succeeded in determining by means of cultures of this microbe a blennorrhagic conjunctivitis in hares.

This form of conjunctivitis is rare in adults; Heller affirms that out of 18,000 cases of gonorrhea in adults in the venereal wards of Charity Hospital, Berlin, in not a single case has he observed gonorrheal infection of the eye. As this form of conjunctivitis is frequent in the new-born infant, and rare in adults, he concluded that the conjunctiva of infants was predisposed to the gonococcic infection, and he was led by this consideration to attempt the infection of the conjunctiva in newly-born animals. He opened by means of a sterilized bistoury the eyes of new-born hares and instilled several drops of a pure culture of gonococci. In 45 animals there was a positive result; in the conjunctival pus there were found gonococci in abundance. The most of the hares got well after several weeks; in some the cornea remained hazy. In three there was extensive, destructive suppuration, corresponding to what we sometimes witness in infants, the victims of malignant blennorrhagic conjunctivitis. He has obtained identical results with pus from the urethra of the male — has continually failed in inoculating the pyogenic cocci.

At the same meeting Max-Wolff stated that he had examined the microscopic slides of Heller. He did not feel satisfied that Heller's micro-organisms were really gonococci. In the blennorrhagia of man, the gonococcus is always intra-cellular; this character was wanting in Heller's preparations.

#### MEDICAL NOTES.

**A HOSPITAL MEMORIAL TO KEATS.** — Among the various devices now being tried to relieve Guy's Hospital, London, of its financial difficulties, is that of raising a sufficient sum to permanently endow a bed in memory of the poet Keats who served a short time there as a medical student.

**THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.** — The Sixth Annual Meeting of this Association will be held on Tuesday and Wednesday, September 29th and 30th, and Thursday, October 1st, in Allston Hall, Studio Building, on Clarendon Street, near St. James Avenue, Boston, Mass.

**THE AMERICAN ACADEMY OF RAILWAY SURGEONS.** — The third annual meeting of the American

Academy of Railway Surgeons will be held at the Auditorium in Chicago, Ill., on Wednesday, Thursday and Friday, September 23, 24 and 25, 1896. The President is Dr. John E. Owens, and the Secretary, Dr. Webb. J. Kelly.

**MEDICAL PRACTICE IN KENTUCKY.** — The physicians of Stanford, Ky., have united in sending out the following circular:

WHEREAS, The merchants and other business men of Stanford have adopted the *cash system*, we, the physicians of this community, ask and demand that our bills, in the future, shall be paid every thirty days in cash, its equivalent, or a note negotiable and payable in bank, with legal interest, and due when services are rendered. Persons now owing us for past professional services must come forward and settle at an early date. There is a business as well as professional side to the practice of medicine and surgery, which we are determined to observe in the future.

**THE OREGON OPIUM LAW.** — The Supreme Court of Oregon has, by a recent decision, sustained as constitutional the law passed in 1887, providing that no person shall have in his or her possession or offer for sale any opium, morphine, eng-she or cooked opium, hydrate of chloral or cocaine, who has not previously obtained a license therefor, unless, as it clearly implies, it be obtained on the prescription of some duly qualified physician or pharmacist for medicinal purposes. The license is to be issued only to regularly qualified physicians who keep a stock of drugs and medicines for their own use in prescription, and regularly qualified druggists.

**"SPITTING" IN INDIANA.** — The Indiana State Board of Health has issued a circular letter to all railroad officials asking them to have ejected from their trains every man who persists in spitting on the floor of the cars or stations after he has been warned not to do so. In the circular the board explains that the sputum contains the germs of *la grippe*, nasal catarrh, and various other diseases. It also declares that "spitting is a nasty and unnecessary habit," and explains that the Board of Health will pass a rule against spitting which will have all the force of law if the railroads will post it up and endeavor to enforce it. The circular adds: "When the rule is first published and posted up in public places this board will, of course, be loudly abused as foolish, impracticable and idiotic. Attention thus being gained, we will publish in every county reason for the action." — *Journal American Medical Association.*

**THE BRITISH MEDICAL ASSOCIATION.** — The British Medical Association, at its recent meeting in Carlisle, voted to accept the invitation of the Montreal branch, seconded as it was by the Toronto and other Dominion members, to hold its sixty-fourth annual meeting in Montreal in August, 1897. The formal invitation was conveyed by a committee composed of Dr. G. E. Armstrong, Professor of Clinical Surgery, McGill University, and Surgeon to the General Hospital, Montreal, and Dr. J. G. Adami, Professor of Pathology in the McGill University, and Pathologist to the Royal Victoria Hospital, Montreal; sup-

ported by Dr. J. H. Cameron, Professor of Surgery, University of Toronto; Dr. A. B. Macallum, Professor of Physiology in the University of Toronto; Dr. Peters, Professor of Clinical Surgery in the University of Toronto; and Dr. Doolittle, Lecturer in Therapeutics in the University of Trinity College, Toronto.

**HIGH PRICES AND PROSPERITY.**—To those who preach that high prices for farm products are the index of the farmer's prosperity, a few quotations of the prices of farm products in the South during the war may be of interest. In 1864 when flour brought \$300 a barrel, beans \$75 a bushel, and \$60 was the price of a turkey, one might conclude that the farmers were on the very crest of the wave of prosperity. The farmers took in money beyond the dreams of avarice; in fact, more than their pockets would hold. It used to be said that people took their money to market in their baskets, and brought their purchases home in their pockets. But then, it seems, just as in the present period of low prices, the farmers were discontented. Perhaps the other side of the picture, the fact that they had to pay \$100 to \$200 for a pair of boots, \$20 for a pound of tea or sugar, and \$2 for a drink of whiskey may have had something to do with their discontent. A good idea of the effects of inflation in those days may be obtained from an amusing account of the expenses incurred by an officer of artillery in travelling from Richmond, Va., to Augusta, Ga., in 1865, taken from Mrs. Jefferson Davis's memoir of her husband, and quoted editorially in a recent number of the *New York Evening Post*. The account is as follows:

March 11.	Meal on the road . . . .	\$20 00
March 17.	Cigars and bitters . . . .	60 00
March 20.	Haircutting and shave . . . .	10 00
March 20.	Pair of eye-glasses . . . .	135 00
March 20.	Candles . . . . .	50 00
March 23.	Coat, vest and pants . . . .	2,700 00
March 27.	One gallon whiskey . . . .	400 00
March 30.	One pair of pants . . . .	700 00
March 30.	One pair of cavalry boots . . . .	450 00
April 12.	Six yards of linen . . . .	1,200 00
April 14.	One ounce sul. quinine . . . .	1,700 00
April 14.	Two weeks' board . . . .	700 00
April 14.	Bought \$60 gold . . . .	6,000 00
April 24.	One dozen Catawba wine . . . .	900 00
April 24.	Shad and sundries . . . .	75 00
April 24.	Matches . . . . .	25 00
April 24.	Penknife . . . . .	125 00
April 24.	Package brown Windsor . . . .	50 00

However, the advocates of free silver and cheap money tell us that we need not be anxious about the results of inflation in raising prices in the future. The conditions have been changed in some magical manner so that the products of the downtrodden farmer are to rise in price, while the goods of the millionaire, the shoemaker or the tailor, which the farmer needs, are to cost the farmer no more cheap dollars than they now do honest ones! How skilled in logic are the astute and disinterested benefactors of their race who are leading the farmers to set the world's experience at naught, and vote for such a millennium of high prices!

**THE POSSIBILITIES OF PHARMACY.**—According to a correspondent of the *Medical Record* of August 1st, the following prescription carefully filled twice in one month cured a Chelsea, Mass., patient of a gleet:

R	Calsum hypophos . . . . .	3ij
	Potas. hypophos . . . . .	gr. xxv
	Lithier brom. . . . .	3i
	Dis. phosphor. acid . . . . .	3ij
	Fl. ex. nux vomika . . . . .	3iss
	" hydrasters . . . . .	3vi
	" hammemella . . . . .	3vi
	" cann. indica . . . . .	3iss
	" gelseminum . . . . .	3i
	" gentiarn . . . . .	3ij
	" chim. ophila . . . . .	3ij
	Oil of morrus . . . . .	3iv
	Aq. destil.	
	Syr. symplectic . . . . .	aa ad 3xxxij

M. Too teaspoonfuls in water one-half hour before meals.

#### BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—During the week ending at noon, August 19, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 51, scarlet fever 14, measles 18, typhoid fever 80.

**HAVERHILL CITY HOSPITAL EXAMINATION.**—A competitive examination for the position of house officer to the City Hospital, Haverhill, Mass., will be held at 11 A. M., Wednesday, August 26th, at the office of Dr. J. F. Croston, No. 83 Emerson Street, Haverhill. Applicants may address Dr. M. D. Clarke, Haverhill, Chairman of the Staff.

**A HOSPITAL FOR PROCTOR, VT.**—The new cottage hospital at Proctor, Vt., was formally opened on August 8th. It is a modern building, a short distance from the centre of the town and arranged to accommodate ten patients. The first story has an accident and operating room thoroughly equipped with modern surgical furnishings. One of the wards is also on this floor. The domestic and executive arrangements are all in the second story. The hospital has been built and equipped by the Proctor Marble Company; and while primarily intended for such of the employees as may need its services, it is to be open to any persons in the village. The management has been placed in the hands of a committee of townspeople. The district nursing in the town, which is already completely established, is now to be done from the hospital by its training-school. The attending physicians thus far appointed are Drs. J. M. Hamilton, of Proctor, and H. H. Swift, of Pittsford.

#### NEW YORK.

**DEATH OF PROFESSOR PRENTISS.**—Professor Albert Nelson Prentiss, who, since the foundation of Cornell University, in 1868, has occupied the chair of botany, died at Ithaca on August 14th. In 1871 his essay on "The Mode of the Natural Distribution of Plants over the Surface of the Earth" received the first Walker prize offered by the Boston Society of Natural History.

## Miscellany.

### POISON-IVY.

THERE is a well-known poisonous shrub called poison-ivy (*rhus toxicodendron* or poison oak) of whose pernicious effects many who frequent the beaches and woods at this season have experience, and which causes a pretty severe form of dermatitis. The shrub is from one to three feet high, and grows in woods, fields, and along fences from Canada to Georgia. It is one of the worst pests of our beaches. The juice applied to the skin frequently produces inflammation and vesication; and the same poisonous property is possessed by a volatile principle which escapes from the plant itself. There are certain persons who are peculiarly susceptible to this poison, and who, if they come near to an ivy shrub with or without contact are almost certain to have a violent erysipelatous inflammation of the whole body. The disease usually begins in the hands from which it spreads; the face is seldom spared, and the swelling is often sufficient to obliterate the features. Vesicles, pustules and even abscesses have followed, and instances are on record where the eruption has lasted for several weeks, with great itching, smarting, and even pain, and for a part of the time with high fever. Some persons can handle the ivy with impunity, and there is a wide difference in susceptibility to its influence.

Our object in bringing this familiar subject before our readers is to call attention to a nuisance of our beaches and groves and other places of summer resort. This plant is one easy of extirpation, and it would seem that local boards of health might reasonably take measures for suppression of the evil in all places under their jurisdiction.

### STATE AND PREVENTIVE MEDICINE.

In his address as Chairman of the Section on State Medicines at the meeting of the American Medical Association, Dr. Shepard took up the possibilities of preventive medicine, and the innumerable points at which the true State medical care, which should be preventive rather than remediable, touches daily life.

"The ideal physician would be the State physician, whose position and income assured would enable him to devote his entire time and best powers in seeking the highest interests of the community in the prevention of disease. For ages men have sought for a panacea. . . . Strive as we may, we are convinced that never will a remedy be found to obviate the penalty sure to be enacted by violated law. Preventive medicine will teach people how to live, and their ignorance and panaceas will die a natural death. This is worthy of the earnest attention of the ablest minds, and will produce most important results. The loss of time on mere effects, instead of the original causes of disease is like giving attention to the branches, instead of striking at the root of the deadly upas tree."

After somewhat cursorily reviewing the progress of preventive medicine from the time of Moses, he speaks of some of the needs and benefits of the present day. In his opinion the adulteration of food should condemn the doers far down into the tenth pit of the eighth circle. He says: "Of all the liars in

existence, none are worse than those who advertise to furnish food or medicine and really deal out that which is bound to cause disease and leave ruin in its path. If there was a soul above filthy lucre in the patent-medicine vender there would be none of this."

There will be no nicotine neuroses in the future; for, "If ever our people are to be redeemed from the thralldom and unmitigated and unlimited curse of tobacco using, it must come from the teachings of preventive medicine."

"If ever legislation regarding public questions shall be elevated above the plane of practical politics or personal gain, we may obtain some results that will help to promote the best interests of the community. . . ."

"Let us bear in mind that we are responsible for this condition of things, that it is every physician's duty to take an active and intelligent part in all political matters, and not leave them to the ignorant and vicious. When this is thoroughly carried out, and direct legislation comes in, a new era will be inaugurated. . . ."

"Unfortunately, outside of the medical profession, but comparatively few minds are possessed of a practical knowledge of sanitary matters. Hence the necessity of continually reiterating and disseminating what many of us consider the most commonplace truths, until their full acceptance shall render our land a sanitary Eden."

### GOLDSMITH AND TRINITY COLLEGE.

DR. GEORGE MULLINS, writing from Sidney, Australia, to the *Journal of the American Medical Association*,<sup>1</sup> in reference to the medical career of Oliver Goldsmith, says:

"The Rev. Dr. Stubbs, in his 'History of the University of Dublin,' published in 1889, gives in an appendix, some university records of well-known members of the college during the seventeenth and eighteenth centuries, from which I extract the following passages: 'It may be interesting to inquire what the college records inform us as to the undergraduate career of the eminent men who were educated in Trinity College during the first two centuries of its university work. It must be remembered that no records of terms or examinations during the first century of the college have been preserved. The Senior Lecturer's books, which contain an account of the attendance of the students at the term examinations, and of their answering, were not kept until the middle of the eighteenth century. The old Senior Lecturers, however, filled up in their own handwriting a series of books in which were entered the names and the Christian names of all who were admitted into the college as students, the names and professions of their fathers, the place of their own birth, their own age at entrance, the date of their admission, the name of the schoolmaster who had educated them, and of their college tutors. The oldest of these books which remains begins in January, 1637-8, and continues to November, 1644. The entries then ceased, and they were not resumed until January, 1652, from which day to the present there is a continued record of the admission of students.' Then follows a list of the most notable students of the college: 'Goldsmith, Oliver,

<sup>1</sup> August 8, 1896.

admitted as Sizar 1744, aged 14 years; son of the Rev. Charles Goldsmith; born in Westmeath; educated by Mr. Hughes; college tutor, Mr. Wilder, B.A. 1750.' He was the celebrated poet, and the author of the 'Vicar of Wakefield.' As this entry was made during Goldsmith's stay in the college, there is every reason to believe that the statements it contains are correct."

#### THE SLOWNESS OF OBTAINING PRACTICE.

THE prolonged and disheartening waiting for patients which the young physician undergoes is proverbial. In the present day it seems more difficult than ever for one not especially aided to obtain a start. But it is not a new story, and there may be some encouragement for the younger members of the profession in the account by Matthew Baillie, Physician Extraordinary to George III, in a brief autobiography of his early years of practice.<sup>1</sup> It is also an example, which is perhaps not needed so much, of engaging in matrimony upon a basis of education and expectancy. He says:

"At the time of my marriage, and indeed, for several years afterwards, I had scarcely any business as a physician. At the end of the first four years, after I was appointed physician to St. George's Hospital, I did not make more than £100 per annum. In the course of three or four years more I began to feel that I might ultimately succeed as a physician, for I was then making five or six hundred pounds in the year. About this time Dr. Pitcairn, an intimate and very kind friend, was seized with a spitting of blood one night when he was stepping into bed, and sent for me in the morning. I shall never forget the calmness with which his note was worded, and the quietness of his appearance when I saw him. He was perfectly calm, altho' he must have thought that this symptom was the beginning of a fatal disorder. I attended him while this symptom continued, and when he went to Portugal on account of his health, he recommended, without any solicitation or knowledge on my part, a great many patients to me. Dr. Pitcairn was then in the height of his reputation and business, and his recommendation was of the greatest use to me. No considerable assistance was ever given me from any other quarter. Dr. Hunter died before I had finished my medical education, and Mr. Hunter died when I was so young a physician that no effectual assistance could be given me. Dr. Denman was always very kind, and inclined to assist me as much as he could, but what he could do was chiefly in his own line of practice, and his interest was therefore almost entirely employed in advancing his other son-in-law.

"In about a year after Dr. Pitcairn went abroad my business began to increase very rapidly, and in the course of a few years became quite overwhelming. I was employed daily from six o'clock in the morning till past eleven o'clock at night (except a short interval at dinner) in seeing patients and in writing answers to letters, and some patients were often left unseen, whose cases were not urgent, and many were declined altogether. This state of business continued for about twelve years, and although for some years I was several months in the country in autumn, yet my health became at length very much dilapidated, and I had nearly sunk altogether under excessive labor and great anxiety of mind. It became necessary, therefore, to come to some resolution about myself, either to give up business altogether, or to circumscribe it within the powers of my constitution. I chose the latter plan, and confined myself to giving opinions, and attending in consultations. Since that time my health has considerably improved. I hope that I may be allowed to say, for

the circumstances can only be known to myself, that I never in a single instance applied, either directly or indirectly, to be a physician to any family or individual, and that I never employed any means, either directly or indirectly, to lessen the confidence of a family or individual in the medical practitioner whom they were accustomed to employ. The first I thought in some degree below the dignity of a liberal profession, and the other I thought morally wrong."

#### A WRY-NECKED FAMILY.

DR. HILTON THOMPSON reports<sup>1</sup> an interesting series of four cases of wry-neck in the same family, though there is nothing in the family history to suggest a cause for it.

The first patient, now the most severely affected, had torticollis in childhood, but does not know the date of its commencement. When fourteen years of age she had chorea, but there is no history of rheumatism. After this date the torticollis became more marked. As regards her present condition there is well-marked torticollis. The right shoulder is pulled up. There are tonic contractions of all the muscles of the left side of the neck and frequent jerking contractions of the erector spinæ muscles. The muscles of the right side of the neck are hypertrophied and are much larger than those of the affected side. There are jerking choreiform movements of the muscles of the face and great difficulty in speaking and swallowing. The limbs are also markedly affected. When spoken to all the contractions become exaggerated. Slight movements occur during sleep. Otherwise the patient is in good general health.

The brother, a strong man of thirty-six, was entirely well till four years ago, when he began to have twitching of the face and neck. Six months after this he noticed that his head was pulled to one side. The contractions were worse in damp weather; at times he had a difficulty in speaking. At the present time the left shoulder is markedly pulled up, and the head is pulled backwards and rotated to the right. There are no convulsive movements, but if the affected sternomastoid be taken between the finger and thumb slight tonic contractions can be felt. The sternomastoid and trapezius on the affected side are smaller than on the corresponding side. There is no paralysis or loss of sensation. His general condition is good.

A second brother's trouble is of only ten weeks' duration. His head is strongly pulled down towards his right shoulder, rotated to the left, and extended so that his face looks upwards and to the left. The right shoulder is slightly pulled up. The right-sternomastoid, the upper border of the trapezius, and the levator anguli scapulæ are affected; these muscles are slightly hypertrophied.

The last case is a healthy, good-looking girl, eighteen years of age. She states that for a few months she has been troubled with involuntary movements of her head backwards and to the right. At first the movements were very slight and occurred at long intervals, but lately they had been stronger and more frequent, and now she notices that her head is slightly pulled to the left when she is thinking of something else but she can always keep it straight by an effort of the will. The head is at present slightly rotated to the left and drawn down to the right shoulder.

<sup>1</sup> The Practitioner, July, 1896.

<sup>1</sup> Lancet, July 4, 1896.



## METEOROLOGICAL RECORD

For the week ending August 8th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...2	29.80	66	71	62	100	84	92	E.	S.	7	5	R.	C.	.77
M...3	29.98	71	81	61	72	74	73	W.	S.	7	7	C.	C.	—
T...4	29.95	78	90	67	74	62	68	W.	W.	7	7	C.	C.	—
W...5	29.98	72	80	63	70	87	78	N.	N.	3	12	C.	O.	.28
T...6	30.12	65	69	65	91	96	94	N.E.	N.E.	7	7	O.	O.	.49
F...7	29.97	77	90	61	95	74	81	W.	S.W.	10	12	O.	C.	.06
S...8	29.96	75	80	64	95	76	86	N.E.	S.E.	5	6	C.	C.	—

\* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threat-  
ening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 8, 1896.

Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	809	388	27.60	7.92	20.28	1.08	2.88	
Chicago	1,678,967	577	300	37.80	8.82	30.42	2.88	2.34	
Philadelphia	1,164,000	490	226	26.40	10.00	20.20	2.20	2.80	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	491,206	270	133	31.45	12.58	26.27	.74	2.22	
Baltimore	496,315	193	89	32.24	10.92	27.08	2.08	.52	
Cincinnati	336,000	127	36	11.70	8.58	7.02	3.12	—	
Cleveland	314,537	89	11	20.16	2.24	14.56	1.12	4.48	
Washington	275,500	142	66	19.60	14.10	13.30	3.50	.70	
Pittsburg	238,617	112	64	38.27	4.45	29.37	3.56	.89	
Milwaukee	265,000	—	—	—	—	—	—	—	
Nashville	87,754	39	13	20.48	12.80	17.92	2.56	—	
Charleston	65,165	34	13	14.75	11.76	5.68	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	98,687	38	28	52.60	5.26	42.08	—	—	
Fall River	88,020	53	36	41.36	13.16	39.48	1.88	—	
Lowell	84,359	59	35	40.58	6.76	33.00	1.69	1.69	
Cambridge	81,619	43	27	51.01	2.32	41.76	4.64	—	
Lynn	62,355	—	—	—	—	—	—	—	
New Bedford	55,254	27	19	51.80	3.70	48.10	—	3.70	
Springfield	51,534	22	13	12.45	8.30	12.45	—	—	
Lawrence	52,153	21	11	19.04	—	12.28	—	—	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	34	17	44.10	2.95	44.10	—	—	
Brookton	33,157	—	—	—	—	—	—	—	
Haverhill	30,185	17	9	35.58	—	35.58	—	—	
Malden	29,706	8	4	37.50	—	25.00	—	12.50	
Chelsea	31,235	—	—	—	—	—	—	—	
Fitchburg	26,394	—	—	—	—	—	—	—	
Newton	27,422	14	8	35.70	7.14	35.70	—	—	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	13	7	34.85	—	34.85	—	—	
Waltham	20,877	14	7	50.00	14.28	42.84	—	—	
Quincy	20,712	—	—	—	—	—	—	—	
Pittsfield	20,447	6	3	33.33	16.66	33.33	—	—	
Everett	18,578	7	5	14.28	14.28	—	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,554	5	2	60.00	—	60.00	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 3,340: under five years of age 1,604; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,028, diarrheal diseases 811, consumption 293, acute lung diseases 127, diphtheria and croup 72, typhoid fever 66, whooping-cough 42, measles 15, cerebro-spinal meningitis 10, scarlet fever 8, erysipelas and malarial fever 2 each.

From whooping-cough New York 13, Chicago 9, Philadelphia 5, Pittsburg 3, Baltimore, Boston, Cincinnati and Charleston 2 each, Washington, Lowell, Lawrence and Medford 1 each. From measles New York 8, Chicago and Pittsburg 2 each, Boston, Providence and Lowell 1 each. From cerebro-spinal meningitis

Worcester 4, Washington 2, New York, Baltimore, Boston and Waltham 1 each. From scarlet fever New York 4, Chicago, Philadelphia, Boston and Providence 1 each. From erysipelas New York and Everett 1 each. From malarial fever New York and Charleston 1 each.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 8, 1896, TO AUGUST 14, 1896.

The extension of leave of absence on account of disability, granted MAJOR CLARENCE EWEN, surgeon, is further extended one month on account of disability.

So much of S. O. 69, A. G. O. March 23, 1896, as directs FIRST-LIEUT. BENJAMIN BROOKE, assistant surgeon, to report to the President of the Examining Board, appointed to meet at San Francisco, Cal., April 14, 1896, for examination by the board, is revoked.

FIRST-LIEUT. HENRY A. SHAW, assistant surgeon, will proceed to Fort Brady, Mich., without delay and report for temporary duty at that post.

LIEUT.-COL. ALFRED A. WOODHULL, deputy surgeon-general, and MAJOR CHARLES SMART, surgeon, are detailed to represent the Medical Department of the Army at the twenty-fourth annual meeting of the American Public Health Association, to be held at Buffalo, N. Y., September 15, 1896.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 15, 1896.

M. K. JOHNSON, assistant surgeon, detached from the U. S. S. "New York" and to the C. S. S. "Bache."

G. A. LUNG, passed assistant surgeon, ordered to the Receiving-ship "Vermont."

E. R. STITT, passed assistant surgeon, detached from the Receiving-ship "Vermont" and ordered home on waiting orders.

## BOOKS AND PAMPHLETS RECEIVED.

De La Luxation Congénitale du Fémur. Par le Dr. Edouard Delaglade. Paris: G. Steinheil. 1896.

Report of the Bureau of Health of the City of Denver for the Year 1895. William P. Munn, M.D., Health Commissioner. Published by the City of Denver. 1896.

Il Triennio 1883-85 della Clinica Obstetrica e Ginecologica di Firenze. Diletta dal Prof. Cav. Uff. Dommico Chiara. Rendiconto Clinico del Dott. Emilio Fasola. Parte prima. Firenze. 1885.

Diet for the Sick. Contributed by Miss E. Hibbard, Principal of the Nurses' Training School, Grace Hospital, Detroit, and Mrs. Emma Drant, Matron of Michigan College of Medicine Hospital, Detroit. Second edition, 100 pages. Detroit, Mich.: The Illustrated Medical Journal Co. 1896.

Kell's Medical, Pharmaceutical and Dental Register-Directory and Intelligences with Special Medical, Pharmaceutical and Dental Departments containing detailed information of Colleges, Hospitals, Asylums, Societies, with Street Lists, etc., for Pennsylvania, New York, New Jersey, Maryland, Delaware and District of Columbia. Fourth edition. George Kell, editor. Philadelphia: Burke & McPetridge Co. 1896.

The General Practitioner; a Manual for the Practice of Medicine, embracing nearly all the Diseases of the Various Branches of the Healing Art, with their Several Definitions, Symptoms and Causes. By Theodore Strelaz, M.D., formerly Assistant Surgeon, Second Regiment Cavalry, B. G. L.; Surgeon Superintendent of German Emigration to Australia; Explorer and Author of "Trichiora Spiralis," "The Cholera," etc. Third edition. Chicago: Published by the Author. 1895.

Exhibition of a Suicide's Brain, with Two Pistol-Ball Wounds. Remarks on its Fissural Anomalies. The Paroccipital Fissure: Should it be Recognized and so Designated? The Cerebral Fissures of Two Philosophers, Chauncy Wright and James Edward Oliver. The Ectal Relations of the Right and Left Parietal and Paroccipital Fissures. The Dorsal Sack, the Anlix and the Diencephalic Flexure. Mesal Aspect of the Right Half of an Adult Human Brain. By Burt G. Wilder, M.D., Ithaca, N. Y. Reprints. 1894-96.

Southall's Organic Materia Medica, being a Handbook treating of some of the more important of the Animal and Vegetable Drugs made use of in Medicine, including the whole of those contained in the British Pharmacopoeia; designed for the use of Teachers, Pharmaceutical and Medical Students, Chemists, Druggists and others. Fifth and enlarged edition by John Barclay, B.Sc. (Lond.), Sometime Lecturer on Materia Medica and Pharmacy in Mann College, Birmingham. London: J. & A. Churchill. 1896.

## Original Articles.

### LORENZ'S OPERATION IN CONGENITAL DISLOCATION OF THE HIP.<sup>1</sup>

BY EDWARD H. BRADFORD, M.D., BOSTON.

THE various methods of treatment of congenital dislocation of the hip may be said at present to be under investigation. The report of the ultimate results are of importance, meaning by the term "ultimate results" the results some years after treatment has been abandoned. The two methods of treatment at present in use may be classed, first, as that of stretching, by mechanical means, of the shortened muscles and ligaments, followed by a retention, by means of appliances, of the limb or limbs in the position newly gained, in the hope of the formation of an artificial socket sufficiently strong to sustain the weight of the patient in subsequent locomotion. The second method, namely the operative, includes both the treatment by forcible reduction, and the methods of Hoffa, Lorenz and others, for the establishment of a new acetabulum by the knife and the curette. At a discussion on the subject in the Berlin Medical Congress before the Orthopedic Section, the claim was made that no single case could be found recorded where, ten years after treatment by means of traction, a cure had been established. The following cases represent the ultimate results in a few cases several years after treatment by traction:

**CASE I.** A young girl of seventeen, suffering from congenital dislocation of both hips. At the age of ten she had undergone treatment by traction efficiently carried out for nearly a year. This was followed by the use of a leather corset moulded to the trunk with the patient in as nearly a correct position as possible, the lower portion of the corset pressing down upon the trochanters and upon the sacrum, the corset being kept from riding upwards by means of perineal straps. Appliances of this sort were worn for several years. These were discontinued and at present, at the age of seventeen, the young lady walks with but little peculiarity of gait when she is careful in her locomotion. The lordosis of the back is not marked when the patient is dressed, but is noticeable in her bared back. It cannot, however, be claimed that the results in this case were effected by treatment to any considerable extent. The patient is a muscular girl, and by the use of her muscles, and by training is able to maintain a fairly correct attitude.

**CASE II.** A girl of the age of fifteen has grown rapidly in the last three years. At the age of five she was subjected to treatment by traction for a year; subsequently, corsets were used. The patient is at present not a muscular girl, and walks with a most distressing limp and with marked lordosis. During the last year she has gained somewhat in muscular strength, and is walking better. The course of the affection has not in any way been altered by the treatment.

**CASE III.** This patient has been reported before the Orthopedic Association as under treatment by traction. The treatment was most thorough, and carried out with great care for three years, traction being employed, no weight being allowed to fall upon the head of the femur during that time, with attempts to develop a new socket in the normal position of the

acetabulum, and for two years later only an imperceptible amount of weight was allowed, the joint being protected by apparatus, as described in the "Transactions of the American Orthopedic Association," Vol. IV. A perfect cure was anticipated at this time. At present the tops of the trochanters are an inch above the Nelaton line, and are firm in their position, and are not dislocated backwards. The patient is now eleven years of age, and has been under gymnastic treatment for the last three years; mechanical treatment having been discontinued except the use of a stiff corset. The patient walks with a fairly good gait, without the characteristic waddle when her attention is directed to this; but when tired her gait is characteristic. When the back is bared a marked lordosis is seen, but when dressed with her corset this is hardly noticeable. The patient is strong and is developing in strength. In this instance the most that can be said of treatment is that an improved position of the heads of the femur was gained. The trochanters are certainly lower than at the time treatment was undertaken, and appear to be firm in their position. The most that can be claimed is that the patient walks better than if no treatment had been undertaken.

**CASE IV.** The following patient, a young lady of eighteen, presented herself for advice in regard to flat feet. She was strong and well developed, and had the characteristic gait of double congenital dislocation. She had, at the age of five, submitted to thorough treatment by traction for several years, and a cure was at the time established, as was thought. At the age of eight the trochanters were in a normal position. There was no lordosis, and the patient walked well. At the time when the patient presented herself to me, the changes in figure and weight following development had taken place, and the trochanters were well above the Nelaton line, a well-marked dorsal dislocation having been established with resulting lordosis. In other words, as the patient's weight had increased, the characteristic deformity had been established.

It would appear, therefore, from these cases that the most that can be expected from treatment by traction is an arrest of the development of the deformity, and in some cases the prevention of the worst forms of this deformity, and that even in some instances where least expected, after the developments of growth and weight have been established. Under the circumstances it can fairly be questioned whether the surgeon is justified in subjecting the patient to the tedium of thorough traction treatment, with confinement in bed for years, as has been carried out in some of the cases here reported.

As a substitute for this treatment, the following simple method has been used. It consists simply of the use of a traction splint which is made of a modified Thomas ring knee-splint with a traction attachment. The patient walks about with this, wearing it night and day. No weight is thrown upon the acetabulum, as by muscular exercise the trochanter is brought down to nearly its normal position. It is thought that in single congenital dislocation this method would answer all purposes of expectant treatment. This method can also be carried out, though less efficiently, in double congenital dislocation, and certainly is less irksome to the patient than the expectant methods hitherto recommended.

The results in this method, judged by four cases in which it has been tried, seemed as satisfactory as that

<sup>1</sup> Read before the Massachusetts Medical Society, June 9, 1896, and recommended for publication by the Society.

obtained from the treatment involving confinement in bed. It cannot, however, be said that the results are satisfactory or the method is scientific.

The use of a stiff corset pressing upon the trochanters, moulded to the shape of the trunk, and furnished with perineal straps to prevent the riding of the corset upwards, has been used by a few surgeons, especially in Germany. The material of the corset varies from that of the plaster-of-Paris to leather stiffened with steel, or, as has been used by Hessing and Hoffa, of steel supports fitted especially to the trunk and bearing upon the pelvis. Some improvement in the carriage of a patient is seen, but the method is only palliative.

#### OPERATIVE MEASURES.

**Forcible Correction.** — Dr. Post, of this city, fifteen years ago succeeded under an anesthetic in reducing a case of congenital dislocation in a child, employing the methods of manipulation recommended by Dr. Bigelow. He was unable, however, to retain the head permanently in the proper position. This method is substantially that recommended by Paci of Italy, but the number of cases in which it would be applicable, judging from pathological evidence, is so limited that the method cannot be generally recommended.

#### HOFFA'S METHOD.

At the Berlin International Medical Congress, Hoffa, of Wurzburg, reported the method of operative treatment which has come into extensive use and is known by his name. The method consists of Langenbeck's incision with opening of the capsule from behind, and carefully freeing of the head and neck from all the capsular attachments. The limb is pulled down, and an attempt made to place the head in the point where the normal acetabulum should be situated. This is hollowed out by a sharp curette, and a new acetabulum is made in the normal position. Hoffa claims that the obstacles to the cure of congenital dislocation are all in the ligaments and muscles, and that a thorough division of the attachment of the muscles about the greater trochanter, together with the deepening of the acetabulum, was sufficient to establish a cure. He himself has operated with success in a large number of cases, limiting his operation chiefly to children of five years of age. Hoffa's operation has been extensively performed by other surgeons, notably Kirmisson, Karewski, Lorenz, Bilhaut, Koch, Mikulicz, Broca, Gibney, Burrell, Lovett, Goldthwait and others; but although the method is based upon correct pathological principles, it is open to criticism in regard to surgical technique. The operation has been performed upon eleven patients at the Children's Hospital since 1892, but in no case has benefit followed the operation. The operation involves considerable mutilation of the muscular attachments and a very extensive dissection. Furthermore it does not divide directly the parts chiefly concerned in continuing the dislocation, and does divide some of the important tissues which are not concerned in holding the head of the femur in the dislocated position.

#### LORENZ' METHOD.

An examination of a fresh dissection of the case of congenital dislocation of the hip proves conclusively that the chief obstacles to the reduction lies not in the muscles, but in the capsular ligaments and espe-

cially in the anterior bands. (See "Transactions of the American Orthopedic Association," Vol. VII.) Unless these shortened tissues are lengthened, it is impossible to place the head of the femur in the proper position. These can be divided from the posterior incision used by Hoffa, but only after a very extensive dissection, and much less directly than if the incision is on the anterior surface as recommended by Lorenz. The success reported by Lorenz, of Vienna, has been so remarkable that his method deserves careful consideration. Previous to the operation, the patient is to be submitted to thorough traction in order to stretch as far as possible the muscular tissues, and avoid muscular division and injury which necessarily interferes with the excellence of the ultimate result. He also desires to avoid during the operation muscular incision as far as possible. The anterior bands of the ileo-femoral ligaments are divided, and such as are not divided are to be thoroughly stretched during the operation; and unless the head of the femur is brought down to its normal position, the operation is imperfectly performed. The details of the operation may be described as follows:

The child should be carefully prepared with anti-septic precautions, and should be subjected to a treatment of traction of from five to ten pounds for eight or ten days before the operation. The leg should be brought into position of slight abduction with a slight pull downwards; an incision is made which begins from the anterior superior spine (or a millimetre outside to avoid the anterior cutaneous nerve), and should be continued in the direction of the outer edge of the tensor vaginæ femoris muscle, six or seven centimetres downwards and a little outwards. The incision extends through the subcutaneous tissue to the muscles; the small vessels need no ligature. The fascia should be divided above and down to the anterior border of the gluteus medius muscle. After the tissues are separated, the anterior capsule should be laid bare. On moving the leg the position, size and shape of the head can be examined. The capsule is then incised, the muscles should not be divided, but stretched, except that a few fibres may be divided in some instances to give sufficient room.

#### OPENING OF THE CAPSULE.

After the capsule has been laid bare, the assistant moves the leg by twisting it outwards, in order to stretch the anterior walls of the capsule. The knife is to be inserted near the anterior inferior spine through the capsule, until it reaches the head of the femur. The capsule is then divided in the direction of the neck until the ridge of the shaft of the femur is reached. The second division of the capsule crosses at right angles over the head of the femur. The lower arm of this cross incision reaches to the inner border of the rudimentary acetabulum. The head of the femur can then be brought out, and the neck thoroughly felt. The ligamentum teres can then be incised, and the acetabulum examined.

#### SHAPING OF THE HEAD OF THE FEMUR.

This is rarely necessary. Sometimes the neck is short. Under these circumstances there is nothing to be done except to free the insertion of the capsule and to push it back. If there are adhesions between the head and the capsule they must be separated; some-

times an irregular projection must be removed from the head of the femur.

#### FORMATION OF THE ARTIFICIAL ACETABULUM.

Boring instruments are to be avoided. The bayonet-shape curette is preferable to the straight one with the cup at the side and not at the end of the shank. The curette must be used more as a knife and less as an instrument for boring, and should be sharp at the edge. It is of the greatest importance that there should be sufficient size and depth to the new acetabulum.

#### REPOSITION OF THE HEAD OF THE FEMUR.

When the acetabulum is made sufficiently large, the head is to be put in its proper place. It will be frequently found that the head cannot be pulled down sufficiently to lie under the upper edge of the acetabulum without force; under these circumstances the limb should be pulled down slowly and gradually, using considerable force. If it cannot be placed in a proper position, the business of the operator should be to find out the obstruction. It is frequently caused by the capsule covering of the acetabulum not being sufficiently opened. Sometimes a fold of the capsule interposes, or the entrance of the acetabulum is too small. After the reduction has taken place, it must be tested for its solidity, and the limb must be moved in various directions. If this is not satisfactory, the acetabulum must be made deeper. If the position of the limb (owing to the defect from a curve of the shaft) is a bad one after the operation, the correction of the deformity may be left to a later osteotomy. There is no need of suturing the cut capsule, but the incised skin is sewn with catgut. The patient is placed in a plaster bandage without traction.

The steps of the operation may be mentioned as follows:

The preparatory pulling of the head downwards.

Section of the skin and laying bare of the capsule, separation of the fascia between the posterior head of the tensor vaginæ femoris and the anterior edge of the gluteus medius without injury of the flexor muscles. The opening of the anterior border of the capsule by means of a T insertion, which spares as far as possible the capsule covering the acetabulum.

Shaping of the neck and head of the femur, in rare instances.

Deepening the acetabulum.

Re-position of the head.

Placing of the limb in a slight position of abduction.

The brilliant success reported by Lorenz in over 200 cases is sufficient to justify the attention of the surgical world. The method involves much less mutilation than that of Hoffa, and is applicable to older cases.

The accompanying three cases are of interest in this connection:

CASE I. J. L., a girl of seven years, was operated upon in October, 1895.

CASE II. A. J., a girl of four, was operated upon in February, 1896.

CASE III. X. Y., a girl of three, was operated upon in March, 1896.

In the first of these cases the anterior incision was more free than according to the method described by Lorenz. No difficulty was met in placing the head of

the femur into the acetabulum. The patient was treated after the operation by traction, and a traction splint applied. At the end of six months the traction splint was removed, and the patient allowed to walk. The head of the femur remained firmly in the new acetabulum. In the two succeeding cases no traction treatment was applied after the operation, the head of the femur was placed firmly in the deepened socket; plaster-of-Paris was applied to the partial abducted limb and secured in that position. At the end of six weeks the patients were allowed to walk, and at the present time are walking about freely; the heads of the femora remaining firmly in the sockets, although before the operation they were upon the dorsum. In the first instance no appreciable shortening exists after the operation, although over an inch was present before. In the second the shortening, before operation, of an inch was present. After operation a slight shortening of a quarter of an inch is to be seen, due either to a lack of perfection in the making up of the new acetabulum, or to a shortening of the neck of the femur.

The healing of the wound was rapid, without any interference. Motion at the joint became marked on removal of the plaster-of-Paris bandage—three weeks after the operation.

These results, though recent, correspond with those reported by Lorenz, which have been tested as to permanency by several years' use, and may be regarded as confirming, as far as they go, his experience.

At a recent meeting of the American Orthopedic Association, Lorenz submitted a communication recommending the treatment of congenital dislocation by means of non-operative traction, but applied in a different method from that hitherto used and designed so as to stretch the anterior bands of the capsular ligaments more thoroughly than can be done by ordinary traction. The result of this method is useful only in cases of very young children, and the value of this method is yet to be determined; for older cases Lorenz's method of operation recommends itself as safe and curative.

#### TREATMENT OF DISEASES OTHER THAN DIPHTHERIA BY ANTITOXINS.<sup>1</sup>

BY HENRY JACKSON, M.D., BOSTON.

DURING the last few years, and notably in the last two years, great advances have been made in the treatment of diseases dependent upon the growth of bacteria. From reports received from all parts of the world and corroborated by practical experience in private practice in Boston and in the contagious hospital of this city, we have reason to believe that at last we control a specific capable of curing diphtheria if applied early in the disease and in the proper manner. A comparison of the death-rate from diphtheria at the Boston City Hospital during the last year with that of preceding years, is the most eloquent testimony that can be given of the brilliant and successful labors of Dr. H. C. Ernst as superintendent of the city laboratory for the production of diphtheria antitoxin.

The application of antitoxin in the treatment of disease is the result of long-continued, patient, logical work in the pathological and bacteriological labora-

<sup>1</sup> Read before the Massachusetts Medical Society, June 9, 1896, and recommended for publication by the Society.

stories of France, Germany and Italy; just now it is of importance to properly consider the sources from which we have gained this powerful aid in the treatment of disease, as the advance of science has been threatened by the crusade of the antivivisectionists, undoubtedly of good intentions though in their judgment led sadly astray.

It is difficult to decide definitely to which investigator the final honors are due, as so many have by their labors added something to the final successful issue of the work. Recently the French government has most honorably divided between Behring and Roux a sum of money awarded in consideration of the discovery of the diphtheria antitoxin.

We have as yet no definite proof as to what an antitoxin is. It is produced in the body of an animal that has successfully resisted a disease produced by a bacterium, for instance the bacterium *x*. If this antitoxin is injected into a healthy animal it renders the animal immune against inoculation with the bacterium *x*; further, if the animal is already suffering from a disease produced by the bacterium *x* it may be cured by the injection of a proportionally much larger quantity of antitoxin. There are two theories as to the therapeutic action of antitoxins: (1) that the antitoxin by chemical reaction neutralizes the toxine produced by the bacterium; (2) that it by some unknown property enables the cells to resist the action of the toxine. The amount of antitoxin necessary to protect or cure an animal increases by geometrical progression with the time elapsed since the inoculation. That is, a small amount of antitoxin is sufficient to render an animal immune to the action of the bacterium *x*, whereas a very large amount is necessary to cure an animal suffering from an advanced form of a disease caused by the same bacterium.

Practically, the results which we may hope for from the therapeutic use of the antitoxins are the prevention of further action by the bacteria, and the arrest of pathological processes set up by the action of the bacteria. To take diphtheria as an example: after the injection of a sufficient amount of antitoxin the membrane does not as a rule spread; the toxemia produced by the growth of the bacilli does not increase in severity, and unless the individual is already too much affected there follows recovery. But, on the other hand, the antitoxin apparently produces no effect upon pathological processes already induced by the bacilli; hence it has not been the experience that paralysis is less frequent since the introduction of antitoxin, in some clinics more frequent, probably in that more recovery. It is important to bear this in mind when we come to consider what we may hope for from serotherapy in tetanus; we cannot expect to cure central nervous lesions already produced by the action of the tetanus bacillus, but only to prevent at most the further invasion of healthy parts by the bacilli.

Experimental work was begun on diphtheria and tetanus at about the same time, tetanus being the first subject taken up. Soon after, in 1892 and 1893, Klemperer published his researches as to the treatment of pneumonia by serotherapy; he succeeded in rendering mice immune to inoculation with the pneumococcus by injecting the serum of dogs that had recovered from inoculation with the pneumococcus. The serum which he produced also possessed certain but not marked curative properties. He reported in 1893 the treatment of six cases of pneumonia in the

human subject with serum, and obtained results that led him to consider the method advantageous. Mosny, Bonone, Emmerich and Pansini obtained practically the same results as Klemperer in animal experimentation, but as yet no results of practical importance have been obtained in the treatment of pneumonia in man. In 1894 Hughes and Carter reported the injection of the serum of patients just recovered from pneumonia in ten cases; they had no reason to consider the treatment efficacious. Theoretically, such results seemed to me such as we should expect, as from analogy we could not expect to materially affect a lung already diseased by the employment of an antitoxin serum; we should be able to prevent the spreading of the disease to areas not already affected.

Important work has been done as to the treatment of tetanus, and on the whole the results are such as to encourage us to further experimentation in this line.

In the last year much work has been accomplished in the diseases produced by the streptococcus, though this and the treatment of tuberculosis by serotherapy must still be considered as in the experimental stage.

#### TETANUS.

The only important factor as to the etiology of this disease which can be drawn from the writings of the older surgeons are, first, that it is more apt to follow lesion of the extremities, caused by crushing or tearing, and second, that it is more commonly found in wounds which have been contaminated with earth or dust. Thus Baron Larrey reports one hundred cases of tetanus after a battle, in which many of the wounded had lain on the battlefield through a cold and stormy night.

Three hundred and ninety-five cases of tetanus — injuries of extremities 84 per cent. Cushing gives 128 cases — injury of extremities in 110. In our late war — 28,000 injuries of foot or hand; 94 cases of tetanus.

Recent investigation as to the cause of tetanus offer an explanation of this clinical observation, in that the tetanus bacillus is an organism widely distributed in garden earth, the dust of streets, and in dusty places.

Two Italian physicians in 1884, Carle and Rattone, first established experimentally the transmissibility, and therefore the infectious nature of tetanus; rabbits inoculated from a case of human tetanus died of the disease. They demonstrated the infectious nature, but not the infective agent of tetanus. In 1885 Nicolaïer found that garden earth produced the disease in animals, and obtained impure cultures of great virulence.

In 1886 Rosenback produced tetanus in animals by inoculating them with a bit of tissue from a man dead of tetanus; he found and named them "drum-stick" bacilli of tetanus in the tissues of the man and in the animal; his cultures were not pure, but were virulent. Many experimenters confirmed these observations.

In 1889 Kitasato obtained pure cultures of the tetanus bacilli, having destroyed other organisms present by the application of a temperature of 80° Cent.; his description of the bacilli is accurate and stands to-day unmodified.

The tetanus bacilli grow by spore formation, hence it is difficult to kill them. Experiments have shown that boiling for five minutes destroys the spores of tetanus, while they are resistant to strong chemical reagents.

The practical conclusion for the surgeon can be drawn, that instruments should be sterilized by boiling, as unfortunately tetanus is not unknown as a sequel of surgical operations, and has been observed where healing by first intention has taken place, showing the absence of the ordinary pus-producing organisms.

December 4, 1895, Behring and Kitasato published an article in the *Deutsch. Med. Woch.* on "The Origin of Immunity to Diphtheria and Tetanus in Animals." The work which led up to this article was based on the theory that acquired immunity depended upon some property of the blood serum, and that a chemical property, in opposition to the previously entertained theories as to the importance of the cellular elements of the blood in combating disease. They claim not only to render animals immune to tetanus, but to cure the disease already established. In this article an important point is demonstrated, namely, that the serum of an immune animal, what we now call "antitoxin," would destroy a virulent culture if the two were mixed in the proportion of 1-5 c. c. In Volume XII of the *Zeitschrift für Hygiene*, published in 1892, are several articles by Behring, Schutz and Kitasato, continuing and elaborating their work on immunity and the therapeutic effects of blood serum. Large animals are rendered immune by injecting cultures of tetanus whose virulence has been reduced by the addition of chemicals, either the tri-chloride of iodine or Gram's solution of iodine and iodide of potash. Behring again asserts that the curative serum will cure an advanced tetanus of animals. Tizzoni and Catani, in the *Cent. für Bact.* (Vol. IX, pp. 180 and 685), review Behring's work, and give their methods for producing antitoxin. They are sceptical as to the curative effect of the serum, if the tetanus has reached an advanced stage. In the latter article we first find a chemical analysis of antitoxin, from which we may say:

(1) It is an albuminoid body, as shown by the fact that its power is destroyed at a temperature of 68° Cent., and not affected by a temperature of 60°.

(2) It cannot be dialysed.

(3) Mineral acids and alkalis destroy it.

(4) An alcoholic precipitate dried *in vacuo* retains all the properties of the original serum.

Roux and Vaillard (*Annales de l'Institut Pasteur*, February, 1893) present a most important article. They obtained a powerful serum, estimating its strength, according to Behring's method, as 1 to 1,000,000; that is, 1 c. c. of the serum is capable of rendering immune 1,000,000 grammes weight of mice.

They succeeded by increasing doses in producing a serum in the horse of a protective power of 1 to 10,000,000.

All observers agree as to the possibility of rendering animals immune to tetanus. It is otherwise as to the curative properties of the serum. Tizzoni and Catani, Kitasato and Roux and Vaillard, do not succeed in curing animals, as was so enthusiastically claimed by Behring. Furthermore, Behring in the *Zeitschrift für Hygiene* (Vol. XIII, p. 193), gives in detail many experiments as to the curative value of the serum. The minimal fatal dose of toxine was determined. If the dose of toxine employed was 100 times the minimal fatal dose, the quantity of serum necessary to render the animal immune was increased not 100, but 10,000 times. Further, they found that when mice received twice the fatal dose no curative treatment was of avail if applied twelve hours after the onset of tetanic symptoms.

Roux and Vaillard assert that at the moment of the first onset of tetanic symptoms there is already a sufficient amount of toxine in the system to kill the animal.

As a whole, the experiments on animals as to the curative value of serum do not lead us to expect brilliant and unfailing results in the treatment of tetanus in man. Such results might be expected, as I have stated before that, so far as we can judge, the action of an antitoxin is to prevent the further spread of a disease, and not to cure already established pathological processes.

In drawing conclusions as to the curative value of a treatment in tetanus, we must consider several factors of importance in forming a prognosis in cases of tetanus. It may be acute, chronic or subacute. The mortality of acute tetanus, calculated from a large number of cases, may be estimated as 80-90 per cent.; chronic, 50 per cent. The longer the period of incubation, the less the mortality; also, the longer the duration of the disease after the onset of symptoms the better is the prognosis. The chances are much improved if the patient lives five days.

As to the prognosis of tetanus, the following data may be quoted:

RICHTER.			
Incubation.		Cases.	Recov.
1 to 5 days . . . . .		25	1, 4%
6 to 10 days . . . . .		91	4, 4.4%
11 to 15 days . . . . .		54	14, 27%
15 to 20 days . . . . .		20	9, 45%
over 20 days . . . . .		15	3, 20%

ROLAND.			
Incubation.		Cases.	Recov.
1 to 5 days . . . . .		25	1, 4%
6 to 10 days . . . . .		61	20, 33%
10 to 20 days . . . . .		44	11, 25%
over 20 days . . . . .		6	3, 50%

I have collected and tabulated all the cases I could find in which antitoxin had been used. Many are lacking in detail; where possible I have quoted the opinion of the physician in charge as to the effect of the remedy employed. As in other departments of medicine it is probable that unfavorable results are not published, and Roux and Vaillard make this statement without, however, giving data or proof of the assertion.

Forty-four cases of tetanus are reported, one in a child after lying on the damp ground when much heated, one following a surgical operation, one in the puerperium, one after miscarriage, and 40 following various injuries, all of the extremities except two; 16 died, a mortality of 36 per cent.

Further, I report seven cases of tetanus neonatorum, all fatal except one, and that one Escherich speaks of as chronic, in which the prognosis could not be considered as grave at the worst.

Details are given in 27 cases that recovered:

Incubation.	Cases.
5 to 10 days . . . . .	8
10 to 15 days . . . . .	10
15 to 20 days . . . . .	5
24 days . . . . .	2
38 days . . . . .	1
42 days . . . . .	1

In 24 cases with recovery, in which full clinical data are given: four were mild, five were severe, seven were chronic, and eight were subacute.

In analysis of the cases with an incubation of five to ten days, we find that in four cases the disease was mild in character, and existed except in one instance for seven days before the specific treatment was instituted. In Cases 38 and 42, of short incubation, the



disease was very mild, the first being the non-traumatic case which followed exposure.

Cases 22 and 23 were both acute, in that the symptoms were severe, the initial prognosis was bad, and the physicians in charge felt that the cure was dependent upon the use of antitoxin. In the cases with an incubation of ten to fifteen days, in four instances the disease lasted eleven to nineteen days before the specific treatment was instituted; in the others an average of five days.

In Case 3 the convulsions were severe, reaching 85 in a day; treatment was begun on the fifteenth day, and there was at first no appreciable effect from the injections.

In Case 26 there was cyanosis, the spasms were severe, and the prognosis appeared bad; improvement followed the injections, and was apparently due to them.

In Case 32 the incubation was fifteen days, the prodromata were long, but the symptoms severe on the tenth day, when specific treatment was begun; improvement followed the injections, was marked in forty-eight hours, and the cure was attributed to the injections.

In five cases the incubation was fifteen to twenty days, in two cases ten and thirteen days respectively elapsed before treatment, and in the others an average of three days. None of the cases are described as severe.

In all the cases with an incubation period of twenty-four (two cases), thirty-eight and forty-two days respectively, the course was chronic, and no very marked effect was attributed to the treatment.

Through the kindness of Dr. Withington I had the pleasure of seeing Case 44 (reported by him in detail in the *Boston Medical and Surgical Journal*, 1896, p. 53). In my table I have put down the incubation as six days, with trismus on the thirteenth day, as on the sixth day she first complained of difficulty in opening her mouth, at first supposed to be hysterical.

The prodromata were long, but the symptoms really terrific when the disease reached its height on the nineteenth day, and injections of Gibier's serum were used. Coincident with the treatment improvement began. I think that no one who had seen such a case could allow a patient to die of tetanus without giving him the benefit of a trial of antitoxin.

Such are the data from which we can form an opinion. The total mortality is considerably below the average for even chronic cases; the curative value of antitoxin is not proven either by experiments on animals or by clinical experience. From analogy we have no reason to fear serious effects from the use of the tetanus antitoxin. Taken all in all, we should give a patient with tetanus the benefit of the doubt, and use the remedy. It can never be cheap, as in the first place it is most difficult to make, leaving out of consideration the danger to the man who works with such a deadly poison, and secondly its use is limited as the disease is rare.

#### STREPTOCOCCUS INFECTION.

In the last year preliminary reports have been made as to the use of protective and curative serum in various diseases dependent upon infection with the streptococcus.

Marmorek, working under Roux and Metchnikoff

at the Pasteur Institute, has published the most important work. His object was to obtain a curative serum. His attention was first directed to obtaining a medium that would preserve intact the virulence of a culture of the streptococci, as they soon become inert when cultivated in the ordinary laboratory media. His choice of media is as follows:

1. Human serum 2 parts, bouillon 1 part.
2. Ascitic fluid 1 part, bouillon 2 parts.
3. Serum of ass or mule 2 parts, bouillon 1 part.
4. Serum of horse 2 parts, bouillon 1 part.

These media preserve but do not increase the virulence of a culture.

Secondly, to render his animals immune to a degree sufficient to produce a curative serum, he wished to obtain cultures of great and definite virulence. Marmorek started with a culture from a case of false membrane in the throat, and by successive inoculation of rabbits obtained a culture of such virulence that an amount so minute as to contain but a single germ sufficed to kill a rabbit in a few hours. This dilution he speaks of as the *limite physique*, as if more diluted it could not be used, as one would not be likely to find even a single coccus in the amount injected.

Marmorek states that it is his opinion that the streptococcus formed in various pathological processes in man is one and the same, differing only in grade of virulence, and in proof thereof offers the experimental fact that streptococci from various processes and of varying grades of virulence may, by successive cultivation in the bodies of animals, all be brought to a point of virulence identical, all producing in animals an acute streptococcus septicemia. Various biological characteristics he considers dependent on the media in which the organisms grow, and interchangeable with change of medium and condition of growth. Marmorek renders animals immune in practically the same manner as his predecessor in a similar line of work. In horses he begins with a small injection of a highly virulent culture, practically doubles the dose at each injection until at the end of six months from 600 c. c. to 1,000 c. c. are injected. The horse serum cannot be used for four weeks after the last injection.

Following the suggestion of Roux he rendered horses immune to diphtheria, immune to streptococcus infection, and found them less susceptible than horses not treated with diphtheria toxine.

Many diseases in man are caused by streptococci, or essential and important complications are dependent upon secondary infection with this germ. Erysipelas, various phlegmonous processes, throat diseases, broncho-pneumonia, the often severe complications of diphtheria, scarlet fever and pulmonary tuberculosis.

Marmorek reports numerous experiments upon man.

#### ERYSIPELAS.

Four hundred and thirteen cases. Mortality 3.87 per cent., previously 5 per cent. Taking a series of 165 cases of erysipelas alone, without complications of other diseases, mortality 1.2 per cent. As a result of the use of the serum Marmorek gives the following advantages: improvement in the general condition, fall of temperature, local improvement.

Dose 10 c. c. daily, or in very severe cases 20 c. c. Occasionally erythema follows the injection.



## PUERPERAL FEVER.

Fifteen cases of puerperal fever.

Streptococcus infection alone, mortality 0	7
Streptococcus infection with colon bacillus, mortality 3	3
Streptococcus infection with aureus, mortality 2	2

As an infection process may be a complex process, as seen in eight of these cases, the importance is shown of an exact bacteriological diagnosis in estimating the value of a treatment based upon specific curative measures.

## PHLEGMONS.

Ten pure streptococcus. In all rapid improvement.

Post-operative infection in a case of vaginal hysterectomy with favorable results.

The compound serum from horses immunized against diphtheria and streptococcus infection is reported by Marmorek, and in use at the Hôpital aux Enfants Malades, with favorable results. He gives no details or statistics.

Denys and Leclef report the use of horse serum in various streptococcus diseases of man. Peritonitis following laparotomy, three cases, two rapid recoveries; pyemia, two cured quickly, one recovered ultimately. Gromakowsky, independently of Marmorek, made experiments with rabbits, and succeeded in obtaining a curative and immunizing serum that he tried with benefit in two men.

April 10, 1896, at the meeting of the Obstetrical Society of France, the treatment of puerperal septicemia by sero-therapy was discussed, and Charpentier reported 40 cases collected from the practice of his colleagues. Mortality 42 per cent. The general opinion was that the success was not brilliant, or at present such as to warrant much confidence, further that it was not proven as harmless.

## SCARLET FEVER.

Marmorek has used antistreptococcic serum in scarlet fever. His reasons are that, though the etiological factor in scarlet fever is unknown, the severe complications, as otitis purulenta, nephritis, endocarditis and pseudo-membranous angina are due to the streptococcus. Scarlet fever without these dangerous complications would not be a serious disease.

One hundred and three cases entered, seven were not treated. In 96 cases, a serum of 1-30,000 was used in doses of 10 c. c. In all the cases streptococci were found; 17 were complicated with diphtheria, and were treated with the double serum, four being fatal; 10 c. c. serum were injected daily till the temperature fell, or if complications arose. The most marked effect was in cases with enlarged glands, 19 cases without suppuration. There was one case of mild otitis, four entered with otitis, but rapidly recovered.

"One or two injections sufficed to cure a nephritis if it appeared." Marmorek considers it of real advantage. No evil results. The mortality is not given. Baginsky made use of serum supplied by Marmorek, and gives the following letter from Roux as to the serum: "Nothing authorizes you to consider that the serum has any efficacy in the scarlet fever itself; but a certain number of observations permit us to believe that it has a favorable influence on the complications due to the streptococcus, and so common in scarlet fever."

Baginsky treated 48 cases; several had enlarged

glands which went on to suppuration. The mortality was 14 per cent.; previous mortality 22-30 per cent. Baginsky, in *résumé* merely says that the results were not more unfavorable than in previous years.

[Of 646 cases at the Boston City Hospital, the mortality was 63, or 9.4 per cent.]

A serum from horses rendered immune to diphtheria and the streptococcus, is advertised for sale at the Pasteur Institute in New York, made by Gibier. I have not seen reports as to its use.

## TUBERCULOSIS.

As this disease is the arch enemy of man, we always look with hope towards a treatment which may help us to control its ravages. In considering any treatment, however, we must remember two factors: many cases recover under proper, general, hygienic treatment. The pathologist shows us that in from 20-25 per cent. of autopsies performed for diseases not associated with tuberculosis, we find evidence of a healed tuberculosis as demonstrated by cicatrices or cheesy deposits at the apices of the lungs, or cheesy bronchial glands. Rienzi, of Naples, reports 22 cases treated by Maragliano's method.

1 c. c. serum every second day, for 10 days.

1 c. c. serum every day for 10 days.

2 c. c. serum every day for 10 days.

Rienzi divides his case as follows: (a) Seven cases with circumscribed infiltration; (b) Eight cases with diffuse signs, both lungs; (c) Seven cases with advanced cavity formation.

In general, marked improvement in first class and a part of the second class, as evidenced by increased appetite, gain in weight, diminution of general disturbance, bacilli and amount of sputum. In 10 signs diminished, in five no change, and in seven increased; the last all belonging to the third class. Other favorable cases have been reported by Italian observers.

Bernheim reports encouraging results, injecting 1-3 c. c. of serum from immunized animals; the treatment being continued for from three to six months. Paul Paquin reported at the American Medical Association experiments with serum based on similar principles. He used the blood serum of immunized horses. His reports are favorable; of 22 cases treated in an almshouse, all showed improvement, and none had died at the time of the report. In all a gain of 1½ to 22 lbs. Paquin believes the gain to be due to the specific effect of the serum used, in that the social and hygienic surroundings of the patients were not favorable to improvement on psychical or general hygienic principles.

Other observers have used injections of the serum of the ass or mule, animals which are practically immune to tuberculosis. In this regard it is worthy of note that experiments with the blood of hens, that are naturally immune to tetanus, have shown that their serum possesses no immunizing properties.

Maragliano himself reports 82 cases, and 119 treated by colleagues. On the whole, favorable results.

Until some more definite results are reported, we must look upon this treatment with the eye of a sceptic.

## MISCELLANEOUS DISEASES.

A few cases treated by sero-therapy are reported in many diseases, and I append a *résumé*:

## TYPHUS.

In the province of Constantine typhus is endemic. In a prison at Bongie, from November 25th to December 12th, 40 cases occurred with 12 deaths. Sero-therapy was commenced December 12th, the material used being serum obtained from two patients who had convalesced from a severe type of the disease. From 2 to 6 c. c. were injected into each of the following 39 cases, and only one died. Legrain noted fall of temperature, improvement in the pulse, disappearance of coma and that severe cases soon became mild in type.

## TYPHOID FEVER.

Beumer and Peiper rendered sheep immune to inoculation with the typhoid bacillus; the blood of these sheep rendered experimental animals immune to the action of the typhoid bacillus. As animals do not have typhoid fever the author can only claim that they can prevent or cure a form of septicemia in animals produced by the typhoid bacillus. Börgen has used the serum of B. P. in 12 cases of typhoid in man, but without apparent results.

Several men have employed the serum of patients convalescent from typhoid, but without results worth mentioning.

## CEREBRO-SPINAL MENINGITIS.

Righi reports the case of a boy, seven years old who had cerebro-spinal meningitis a few weeks after his sister had recovered from the disease. The symptoms were headache, chills, fever, vomiting, and on the second day there was stiffness of the neck. In a few days strabismus, facial paralysis and coma followed. On the sixth day blood was drawn from his sister's arm and 5 c. c. of the serum were injected into the boy. Marked improvement followed in a few days, so that he sat up. After a few hours he took food. In fifteen days he was well, except for a slight facial paralysis.

## RABIES.

Tizzoni and Catani report that the serum of animals rendered immune to hydrophobia has the power of conferring immunity and arresting the disease already developed.

The dose required for therapeutic purposes is larger than the dose necessary to produce immunity; but whereas in tetanus a dose for therapeutic purposes is 1,000 times that needed to produce immunity, in hydrophobia it is only ten times larger.

So far no trial has been made in rabies in man; if successful its value will surpass the treatment of Pasteur in that the latter may produce immunity, but cannot cure the disease if once developed.

## LEPROSY.

A vague rumor, without details as to methods, comes from South America that Carrasquilla has had favorable results in the treatment of leprosy, 15 cases, by serum. As the germs of leprosy cannot be cultivated and no animals have leprosy, further that so far as we know the disease is incurable (many cases recover spontaneously — *H. C. E.*), but little credence can be given to the report.

Such in brief are the main facts and theories as to sero-therapy as applied to diseases other than diphtheria. As we seem to have control of one disease so we may hope for success in others, but we should al-

ways remember the old saying that it is "the wisest physician who knows when to withhold treatment and await events."

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BATHS, BATHING AND SWIMMING FOR SOLDIERS.<sup>1</sup>

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"THE soldier may be depended upon to do his whole duty," says Rudyard Kipling, "when he has learned to fear God, shoot straight, keep clean, and honor the State!"

The recognition of the value of personal cleanliness represents one of the greatest advances in the civilization of the present century.

Yet in the five previous conventions of our Association, so little has been said of the importance to the soldiers' health of the third commandment of the epigram just quoted, "Keep clean," that the distinguished Chairman of our Literary Committee, Assistant Surgeon-General Bache, of the Army, has especially requested two papers on bathing, one of them by Surgeon H. G. Beyer, of the Navy, the other by an humble assistant surgeon of the Massachusetts Volunteer Militia.

The need of improved bathing facilities for soldiers, namely, cleanliness baths and swimming places, the latter out-of-doors or in-doors, seems to the writer to deserve more attention from the medical officers, both of our Regular Army and National Guard. By this I do not mean to say our army posts are without very respectable bathing facilities, nor that some of the camp grounds of our National Guard, notably Pennsylvania,

<sup>1</sup> Read at the sixth annual convention of the Association of Military Surgeons of the United States, Philadelphia, May 13, 1896.

New York and Massachusetts, have not some kind of bathing places. I intend to show, however, that we are still behind the times in our system of cleanliness baths for soldiers, and in facilities for teaching them and perfecting them in what Benjamin Franklin aptly termed, "The necessary and life-preserving art of swimming," which he urged should be a part of the national education, since, as he said, "Ability to swim may enable one to save his own life or the lives of others." Furthermore, swimming is the most universal, and for very many persons, the most enjoyable of all healthful physical exercises.

#### SWIMMING IN EARLY TIMES.

Glancing backward, ancient history relates that during the *régime* of Solon all the boys of Greece were required by law to be taught first of all the accomplishments of swimming and reading; and later their possession became so common that when a Greek wished to describe a state of utter destitution of physical and mental training, he used to exclaim, "He can neither swim nor read!" Plato praised the art of swimming, and Aristotle wrote on bathing and swimming and the advantages of salt and fresh water respectively. No less attention was given to bathing and swimming by the ancient Romans, before and during their ascendancy. Even the women were many of them strong swimmers, especially in the early days of the republic. The Roman boys received instruction in swimming just as regularly as in riding and fencing, and usually their fathers were their teachers. The great Emperor Augustus delighted in teaching his nephew swimming, and Julius Cæsar was so proficient in the art that in the Alexandrian war he saved his life and his famous "Commentaries" by swimming from a sinking ship to a place of safety, plunging his head under water from time to time to avoid the shower of arrows that followed him.

The ancient Greeks and Romans did not practise swimming for pleasure or for the benefit of their health alone, but from a motive that had its origin in one of the principles of their religion. We know that the people of antiquity dreaded above everything the being deprived of the honors of sepulture. Therefore, the fear of drowning and having no other tomb than the bottom of the sea or the bed of a river, stimulated them to practise this exercise with more perseverance than modern swimmers, who are not influenced by similar considerations. The Abbé Amilhon says, "This prejudice, which rendered men more careful of their lives, tended to the benefit of the State, in preserving to the country those valuable citizens who, when occasion required, could be of essential service."

"The exercise of swimming," adds the same learned author, "has not only preserved the lives of many persons valuable to the State, but it has enabled not a few to perform successfully heroic acts, which, had they been unable to swim well, they would never have dreamed of attempting." In illustration of his proposition he recalls the well-known story of Horatius defending the bridge leading into Rome, and suggests that he never would have had the hardihood to face the Etruscans as he did, while the bridge behind him was being demolished, without perfect confidence in his swimming powers. He was fully armed, but plunging in he swam easily, as Roman soldiers were accustomed to, in spite of the burden of his armor. Scipio Africanus, for the encouragement of his men,

crossed rivers in this way, his cuirass upon his back. Sertorius, though wounded, swam across the Rhine, burdened in the same way. Such proficiency was attained only by long practice. It was the custom of the Roman soldiers, as soon as they had finished their drills on the Campus Martius to hasten to bathe in the swift waters of the River Tiber, and so refresh themselves. But this custom, like all the other commendable customs of the Romans, came in time to be discontinued, and Vegetius, who lived during the reign of the Emperor Valentinian the Young, mourns over the decadence of an art, the utility of which, both for cavalry and infantry, he speaks of in the highest terms.

Among the barbarous hordes that invaded the Roman Empire, several are mentioned as excelling in the art of swimming, more particularly the Germans. From earliest infancy, their children were bathed regularly in the rivers once a day, and so became hardened and able to endure the cold. Very fitting it is that the descendants of those early Germans, having returned to their old custom of daily bathing their children in cold water, should show the world of to-day the best system of cleanliness bath, and, with the English, should lead the way in promoting the healthful practices of bathing and swimming.

Let us now briefly consider the present bathing facilities of our own Regular Army, and of the British, French, Austro-Hungarian, German and Japanese Armies.

#### WEST POINT.

Beginning with the United States Military Academy at West Point, which the writer had the pleasure of visiting in September, 1895, the cadets were found revelling in an abundance of hot and cold water, in shower and tub baths, and in a commodious, well-constructed swimming tank. Post-Surgeon Torney, and Mr. H. J. Koehler, Swordmaster and Instructor in Swimming and Gymnastics, take the liveliest interest in the hygiene and physical training of the future officers of the army. All the cadets take cleanliness baths at least twice a week, and many three times. Swimming instruction, at first in the tank and later in the Hudson, is given each cadet for six weeks every year until he is able to swim on his chest in the river, behind a boat, for at least ten minutes continuously. Afterward, practice is optional, but is usually continued from choice. About 30 per cent. of cadets, on joining, are unable to swim. The swimming tank is of the best possible material, lined throughout with English white-glazed brick. It is about 60 feet long by 30 feet wide, its depth ranging from four feet to nine feet. Shower baths are conveniently near, and are used by the cadets previous to entering the swimming tank.

The instruction is given in squads of convenient size by the instructor and two experienced enlisted men. The system taught is so excellent that the writer has obtained permission, through Instructor Koehler's courtesy, to have printed in connection with this paper, his valuable little treatise on swimming, prepared for the use of the West Point Cadets.

#### ANNAPOLIS.

Though the scope of this paper is limited to "Baths, Bathing and Swimming for Soldiers," the writer visited the United States Naval Academy at Annapolis, where Surgeon H. G. Beyer has direction of phy-

sical training, expecting there to find even better swimming facilities than those of West Point. Excepting, however, the fine plunge bath in the basement of the gymnasium, and the shower and tub baths for cleanliness purposes, the Naval Cadets do not enjoy as excellent facilities for swimming instruction as are found at West Point. The swimming tank at Annapolis was built many years ago, is of very meagre dimensions, and is not lined with suitable material. It has, however, the one redeeming feature, that it is supplied with salt water. The method of instruction is much the same as that employed at West Point. The writer saw a squad of cadets receiving very scientific and very practical instruction from Instructor Strom, who informed him that about 25 per cent. of the cadets, on joining, are unable to swim.

#### THE UNITED STATES ARMY.

For the facts as to bathing and swimming at our military posts, the writer is largely indebted to Assistant Surgeon-General Alden, of the army, and to other officers of the regular service.

Paragraph 269, Army Regulations, requires frequent bathing. At some posts records are kept, so that it may be ascertained that each man has a weekly bath. Old soldiers are very cleanly in their habits, and need no compulsion as to bathing, but recruits have to be looked after. A majority of our posts, and all permanent posts, have within a few years been provided with ample facilities for keeping clean. There is usually a bath-house in each barrack. Tubs with hot and cold water are usually provided, so many for each Company, and in a few cases shower baths are provided. In some places the facilities are still very primitive, and doubtless will receive more attention. The writer, in two visits to Arizona and other distant territories, where he spent several days in the saddle among the mountains of the Apache country, heard from the cowboys and Mormons great praise of the cleanliness of the United States soldiers, both white and black troops, though the general feeling between soldiers and civilians seemed far from cordial.

As to swimming in the army, recruits are expected to receive instruction in swimming, and the manual prepared by Mr. Koehler, Instructor at West Point, is used as a guide. No swimming tanks or other special facilities for instruction exist. Swimming drill for cavalry is a part of their regular instruction. (See Paragraph 456, Cavalry Drill Regulation, pages 153 to 156.)

#### SOME FOREIGN ARMIES.

The facts as to bathing in the French, German, Austro-Hungarian, British and Japanese Armies were obtained by the writer during two visits abroad, by correspondence, and from the meagre literature on the subject.

#### THE FRENCH ARMY.

In general terms we may say the bathing regulations of the French army require a shower bath for the whole body, by each man, at least once in every fifteen days, and at least once a week a bath for the feet and legs, if in barracks. On the march the foot bath is to be taken as often as necessary. No tubs are used by the regiments, as far as can be ascertained, though they were seen in use at the Military School of St. Cyr in addition to the shower baths. At none of the eighteen principal military schools are there

swimming tanks, as far as can be ascertained, and comparatively little if any attention is given to swimming by any portion of the French Army. Very few of the streams in France are deep enough to swim in, and in few of those that are deep enough, is swimming permitted by the inhabitants in the vicinity.

#### THE GERMAN ARMY.

In the magnificent German Army the very best facilities for keeping clean, as well as very thorough drills in swimming, are found. Though there are no printed official regulations as to bathing, each company commander is required to make and enforce rules for the cleanliness of his men. It is the custom, throughout the army, for every soldier to wash to the waist in cold water every morning, and to bathe his entire body, by means of a shower bath, at least once a week. No tubs are used, experiments with tub baths for soldiers having been tried in the German Army and proven a failure; only basins and shower baths are now in use. The latter, sometimes called the "German rain bath" because first used in German military barracks and prisons, deserves some description.

The development of the "rain bath" system, which gives one a good bath quickly and comfortably — important requisites of a public bath — has tended to the abolition of the bath-tub, and till rather recently has been almost unknown in America, though now being extensively introduced here in many places. In this system tubs are abolished and a fine shower of warm water is substituted, which is made to fall at an inclined angle, the object being to avoid a vertical stream striking the head of the bather, an annoyance objected to by many. In the rain bath the bather stands erect under the shower and the water strikes the body from the neck downwards, the head being wet only when purposely placed under the shower. In the floor, which should be of granolithic or other impervious material, there should be a sinkage of a few inches in the middle, thus forming a basin for the feet, the part hardest to get clean. A short vertical pipe in a corner of the sinkage serves as plug and overflow.

Among the advantages of this system are a great saving in time, so a given number of baths will accommodate a greater number of bathers. It also economizes water and fuel, the shower consuming but three to five gallons of warm water per minute, while the tub bath takes from 40 to 60 gallons. The body of the bather does not come in contact with soiled water or surfaces, a very obvious advantage. Last, but not least, the tonic and mechanical effects of the shower bath are greatly superior to the tub bath.

The first general use of the rain bath was, as stated, by the German Army. From the military service the rain bath was introduced for public baths in Berlin, Vienna, Munich, Hanover, and in fact most of the other cities of Germany and Austria. Rain baths have also been provided for schools in Göttingen, Munich and Weimar, and are used almost daily by 75 per cent. of the pupils. Rain baths have also been fitted up in a great many factories and manufacturing establishments. Comparatively recently, rain baths have been introduced into the United States, and are to be found in New York, Utica and a few other places. They are now being introduced in the Public Bath in Brookline, Mass., and elsewhere.

Besides attention to cleanliness, the German Army makes every effort to encourage and perfect its officers and men in swimming, and this is true of every branch of the service, but especially in the cavalry, in which there is a regular swimming drill for both men and horses, to which great importance is attached. Whenever possible each regiment or garrison has a swimming tank, and there are also many out-of-door swimming places, for example, in the Rhine. Very thorough instruction is given both to army and to navy cadets, and a high standard has to be attained. The enlisted men receive instruction regimentally. In each regiment an officer, assisted by several non-commissioned officers, is detailed in charge of the swimming school. There are no regulations as to the methods to be employed, the officer in charge using his discretion in each particular case. The traditional standard to be attained by a German soldier is ability to swim across the Rhine in uniform and full equipments.

Some years ago Colonel Von Dresky introduced for his command a preliminary land drill in swimming, a special method devised by Major D'Argy of the French Army, and before Van Dresky's time experimented with in the Seventh Brandenburg Infantry by Captain Von Wins. This method, also in use at West Point, makes the acquirement of the art safer, easier and quicker than is otherwise possible. Von Dresky used a combination of the D'Argy with the Pfuel or usual Prussian method when he taught Prince William, the present Kaiser, and Prince Henry, his brother, to swim. The fact that Prince Henry, in full-dress uniform, once plunged from the quarter deck of a "man o' war" and rescued a drowning sailor, not the prince's first rescue, either, speaks eloquently for the success of his instructor, and the prince's courage in the water.

#### THE AUSTRO-HUNGARIAN ARMY.

Taking next the Austro-Hungarian Army, which endeavors to follow, as far as possible, German military methods, we find less attention is given to cleanliness than in some other armies, but in the matter of swimming it does very well. It is the custom for local commanding officers to provide bath-rooms, or bathing places, doing their best with the means at hand. The frequency of bathing seems to rest with the officers, and when in contact with a body of Austrian soldiers, if the truth must be told, one's sense of smell establishes the fact that washing is not always carried to extravagant lengths. Some posts, however, have adequate bathing facilities, consisting of the rain baths just described.

The following are the only official regulations as to bathing and swimming:

In summer, when the weather is favorable, the men shall be taken to bathe at least once a week. Individual soldiers may bathe or swim only at bath-houses or places that have been officially approved.

Out of regard for men who cannot swim, the bathing place is to be carefully sounded, and the danger limits clearly marked. Beyond these limits, they are not allowed to go.

When one or two companies go to bathe, an officer will have charge of them. When a smaller detachment bathes, a non-commissioned officer will be in charge. When several battalions bathe at the same time, a medical officer must be present, and an officer of each battalion.

Swimming instruction is to be given during the summer

at those stations where the local conditions permit a large participation and favorable results without interfering with military training, and is then to be prosecuted zealously.

It is the duty of the local commanding officers at such stations to see that the greatest possible number of their men are educated to become skilful swimmers.

Decency and propriety are to be observed, and both officers and bathers are to see that the latter do not go into the water while heated.

The local commanding officer is charged with finding out or preparing bathing places, and also, when practicable, with fixing up swimming schools. He designates when the different organizations shall use them, and, where possible, orders a medical officer to be on hand. At cavalry stations, where it is possible to give both men and horses swimming drill the necessary steps for the purpose will be taken.

In all the cadet schools and military academies swimming is obligatory, but is taught only in summer, and pretty much under the conditions mentioned in the regulations quoted above. Swimming, like every other athletic exercise, counts as much as mathematics or any other study in determining class rank and the resulting army rank. The standard attained will depend much on the opportunities available; but where the opportunities are excellent, a boy would have to become at least a fair swimmer in order to graduate.

The land drill of D'Argy is a regular part of the system, and Austria possesses some very fine military swimming schools, notably the one in Vienna.

#### THE BRITISH ARMY.

In the British Army, in summer, "bathing parades," as they are termed, are held twice a week. In almost every barrack, iron bath tubs are provided, and a plentiful supply of cold water is turned on. In winter these baths are not generally used. To encourage the habit of cleanliness, however, it is the custom in cold weather to supply a quantity of hot water from the barrack kitchens for bathing purposes.

In India, the West Indies and, indeed, all hot countries, ample provision for bathing is made. The shower bath, however, is not yet introduced, except in military hospitals.

In the military and naval academies, swimming is part of the gymnastic course. About 5 per cent. of the cadets on joining them, as against 25 per cent. and 30 per cent. with us, are unable to swim. They are all well taught, however, before leaving, one of the cadet company officers superintending the final test. Cadets are also taught diving, which gives great confidence. The lowest standard allowed is the ability to swim 300 feet.

At the Military Academy at Woolwich, a swimming bath, 90 feet long, with water heated to 60° to 70° Fahrenheit, has been provided, while at Sandhurst the cadets utilize a lake for swimming and boating, but no cadet is permitted to enter a boat until he has gained a swimming certificate.

The following provisions with regard to swimming for soldiers, are given in the Queen's Regulations:

#### BATHING PARADES.

The art of swimming is to be taught as a military duty at all stations where facilities for so doing exist. During the proper season regular bathing parades are to be formed, at the discretion of commanding officers, for the purpose of instruction in swimming.

The skilled swimmers of each company, etc., are to be ascertained, and so distributed that there may be a sufficient number in each squad to teach the rest.

## PREVENTION OF ACCIDENTS.

In order to prevent accidents and loss of life among the troops through incautious bathing on the part of soldiers unable to swim, small piquets, composed of expert swimmers, are to be told off to attend the bathing places frequented by the troops, to be prepared to jump in to the assistance of any man in danger, and in the event of accident, to follow, to the best of their ability, the "Instructions for the Recovery of the Apparently Drowned," printed by the Royal National Lifeboat Institution. A copy of these instructions will be posted up at the several bathing-places, as well as in every hospital and barrack. Should an accident occur, one man of the piquet is to be immediately despatched to the nearest medical officer.

## LISTS OF SWIMMERS.

A list of swimmers is to be kept in each company, and with a view to ascertain the progress made by the troops, periodical trials, under the superintendence of an officer, are to be made of men who have learned to swim, when the names of men who have acquired the art, should be added to the list.

To swim easily is the only standard required of enlisted men.

In India, large swimming baths exist in all the lines in nearly every cantonment. In the West Indies and in the Mediterranean Stations, the men bathe in the sea all the year round, and to their great advantage.

Swimming is in every way greatly encouraged, by example as well as by command: to illustrate, the writer has heard from a most reliable officer of a captain in the West Indies swimming his whole company round a "man-of-war" at anchor, sharks notwithstanding!

## THE JAPANESE ARMY.

For the facts as to the Japanese Army the writer is indebted to Viscount Ishiguro, Surgeon-General, and to Dr. Stuart Eldridge, of the U. S. Marine-Hospital Service, stationed in Yokohama.

Japanese soldiers are required to bathe daily in summer and three times weekly in winter, tubs being used.

All recruits are taught swimming, which is encouraged throughout the army by providing excellent schools in the nearest rivers and in the sea. Specially expert teachers are employed, and the standard for military and naval cadets, as well as for the rank and file, is the ability to swim one or two miles.

(To be continued.)

"NEWS, OLD NEWS."<sup>1</sup>

BY SAMUEL A. FISK, A.M., M.D., DENVER, COL.

At the meeting of this Association held in Baltimore in 1887, the discussion was devoted almost entirely to Bergeon's method of treating consumption; and one listening to the reports would have believed that, at last, a specific had been found for the cure of that dread disease. At this date we know how far from true that idea was. A few years later, Koch's tuberculin was heralded as the eradicator of pulmonary consumption, and it, too, has been tried and found wanting. Various modifications of this tuberculin have been advanced and their efficacy has not been admitted. Quite recently, the papers have announced, with the blast of trumpets, the arrival of a second

Jenner come to save the human race, and yet the medical world remains somewhat sceptical. Unquestionably, however, there is a hope occupying the minds of men that some remedy will be found that will blot out pulmonary tuberculosis, just as vaccination has small-pox.

Meanwhile, in this mad rush in search of a specific, it has seemed to me that we are in great danger of neglecting the old and well-tried methods which have been found to be of avail; and that our patients are likely to suffer in consequence. So, it may do no harm to call a halt occasionally, and review what we have learned.

To start with, it should be constantly borne in mind that pulmonary consumption is the most fatal of all diseases; it leads the list as the destroyer of mankind. One hundred and thirty odd thousand lives, in this country alone, sacrificed to this disease, is a startling fact, and may well give us pause. We should ever bear in mind the fatality of the malady. The combat is a gigantic one. The foe is worthy of our steel. It is a fight to the finish. Here and there cases are recorded that are exceptions; but in the main the rule holds true, that pulmonary tuberculosis tends to run an unfavorable course from bad to worse, with death as the goal.

It is well for the physician to bear this constantly in mind; whether it be advisable to so inform the patient is quite another question. In my own practice, I deem it of prime importance that my patient should understand the gravity of the situation. The old adage of "Forewarned is forearmed" I hold to apply to the treatment of this disease. I find that ignorance is apt to lead to imprudence and dire results; while a just appreciation tends to a hearty co-operation in the method of treatment on the part of the patient. The information can be conveyed in such a way as to carry with it the hope that will stimulate, rather than the dread which destroys. I recognize that the conditions are different with the Eastern practitioner, and that a direct statement of facts on a first visit, would be likely, in many instances, to prove a blow between the eyes which would so stun the patient as to deprive him of the power of action; and that, in many instances, better results can be obtained by a milder, a more gentle handling. Nevertheless, sooner or later, I think, the patient should understand his condition, so that he will lend a heartier support in the efforts to get the better of it.

Recognizing, then, the gravity of the disease, it is of the highest importance that an early diagnosis should be made in every case. One should familiarize himself with the early signs and symptoms of pulmonary consumption. They may not be "as deep as a well, nor as broad as a church-door," but they are enough, they will do. The acute ear will be on the watch for the early click, developed it may be on cough; for the prolonged blowing expiration, the lengthened percussion note; and he will not disregard these signs because they are found at the interscapular space, or in that part of lung over the region of the heart, or at the angle of the scapula behind rather than at the apex. The physician who is on the alert will not always regard the chills and fever as due to malaria; nor will he construe the loss of appetite as due to simple debility. It may be that he will not even wait for the detection of the bacillus before he has made his diagnosis.

Early diagnosis of this condition cannot, then, be

<sup>1</sup> Presented at the meeting of the American Climatological Association, May 13, 1896.

too strenuously insisted on. One does not wait until the prairie is on fire before he attempts to extinguish the flames. If there is a fire in the basement of your house, you put it out and do not wait for it to reach the upper stories before you begin to fight it. Why, then, should you delay with so fatal a disease as consumption? It will almost certainly climb to the upper stories and destroy the building, if left to itself; so, stamp on it at the very start, put it out in the early stages! And use no half-way, uncertain method, but, recognizing the gravity of the situation, bearing in mind the inevitable outcome, try to extinguish the first sparks.

How can this best be done? Has success attended the home treatment of the disease? Have drugs and home comforts taken the place of change of climate, or done anything but fatten the pocket-book of the physician, or coddled the patient through a steadily progressing malady, an onward and distressing decline to the grave?

To-day, whatever may come in the future, to-day change of climate stands as the well-recognized treatment for pulmonary tuberculosis. True, it does not cure in every instance. But, what treatment is unfailing in any disease? Persons have small-pox two and three times, and may be afflicted even though properly vaccinated. Antitoxin does not save every case of diphtheria. Why, then, should we neglect climatic change because some try it and fail? Nor is the argument that some get well at home to prevail. They are the very rare, the exceptional cases, and should not weigh against the immense number who do not recover, but who sink steadily, steadily to the end. I have known typhoid patients to eat beefsteak and recover, but I do not want to be treated that way, if it is ever my misfortune to have that disease; nor do I believe that you do, either, gentlemen.

Delay is fatal. Tentative methods are not to be tolerated. The patient is entitled to the best that medical experience can offer.

What climate is to be accepted? The factors that are usually thought to be essentials are ability to lead a life out-of-doors, a pure, aseptic air, freedom from moisture, both soil and atmospheric; and it may be rarefied air.

Where are these conditions to be obtained? "I am as sure as I can be about anything at present incapable of actual demonstration," writes Sir Andrew Clark, "that recoveries from phthisis judiciously treated at high altitudes, are much more numerous and much more lasting than those treated by any other method at any other place."

The very carefully collated tables of our worthy ex-President, Dr. Solly, shortly to be published, prove, beyond question, the truth of this statement.

Another of our Presidents, Dr. Knight, of Boston, whose judgment we all value, writes: "There seems to be little doubt that, in suitable cases, the improvement in nutritive activity is much more marked in mountainous regions than on the plains." Then, after citing the cases that can expect benefit from climates of high elevations—such as incipient cases, or those more advanced, but without excavations and not having any serious constitutional disturbance; the hemorrhagic and the fibroid conditions, when the patient is young and the heart not enlarged; and those recovering from pleurisy and pneumonia, in whom the irruption of tubercles is feared—he goes on to say: "The

region which I have found the best for this kind of treatment is the eastern slope of the Rocky Mountains, in the States of Colorado and New Mexico, where the altitude ranges from 4,000 to 8,000 feet."

It is needless for me to say that my own judgment corroborates that of Dr. Knight, but then it is *ex parte*, and, to that extent, imperfect. But, after all, the vital question is—to select the very best climate for the patient, whether it be the Adirondacks, Georgia, Colorado, New Mexico or California, and to send him there at once. There should be no more delay in the wise selection of climate than in the early diagnosis of the disease. Having then located the patient in the spot that is deemed best adapted to his case, put him absolutely in the charge of some physician in that place, in whose ability and experience you have reason to place confidence; inspire the patient to have full faith in that man, and leave the case with him. From that time on, the case requires care and attention such as cannot be furnished by letter or from a distance. And it does require care. A climate, like any other therapeutic measure, has to be used discreetly to obtain the best results. That doctor who sends his patient away from home and tells him to depend on climate and to avoid wise direction at the hands of some competent practitioner in the place to which he has gone, is grossly negligent of his patient's highest welfare.

I have ample authority to back me in this assertion. "The author will have written to little purpose," says Dr. Lindsay, "if he has not shown that climate *per se* is not the exclusive agent in the case, and that, to rely upon it alone, to the exclusion of its indirect influence upon life and habit, is to invite failure."

"Wherever the patient goes, he should if possible," writes Dr. Knight, "consult some good physician of the region, who will lay out a plan of life. Many patients make themselves sick, and even destroy their chances of recovery, by neglecting to consult a local authority for this purpose."

"I have already alluded to the circumstance," are the words of Dr. Hermann Weber, "that intelligence on the part of the patient and his friends is a great help towards recovery in phthisis, and that want of judgment as to the nature of the illness, and of the manifold dangers, and as to the means of cure, renders the diagnosis less hopeful, unless we are able to place the patient under the strictest superintendence of a judicious doctor."

In this respect, doctors who should know better are extremely negligent. How commonly patients are told: "Oh, you don't need any medical advice. Go West, get a horse and lead a life in the saddle, and you will be all right." Only we, who see the dire results of such advice, know! I recall instance after instance of just such counsel, and very bad counsel it is.

One doctor tells his patient: "You don't need any doctor. After you have been West three or four weeks you might drop in and see a doctor, and see how your lungs are." The result is, that, under the stimulus of the rare air of Colorado, the young man overdoes, comes down with high temperature, has one hemorrhage, and then a second, and Dr. — is called in to tell him that his lungs are in a very bad condition, and that he has a fight on hand for his life.

Another doctor tells his patient: "Go West. Take a shotgun and plenty of whiskey, and you will be all right." And then has the audacity to charge for what he terms his advice.



This is all wrong, thoroughly wrong. The local doctor has a great many things to determine that are of the highest importance to the patient. He has to see, for instance, that the invalid is properly located, that he has a good home and a proper room. What good is it for a young man to come to Colorado and shut himself up in the inside room of a poor hotel, as I have known case after case to do? or to take a room that the sun never enters? or to sleep in a room on the ground-floor of a small cottage with no cellar underneath, and with the only window opening upon a narrow, dark and damp passage between his house and the adjoining house? He has come West for the air; but, is he getting it? All the other conditions of life he can get, it may be, in a far better degree at home than in his new location, and then he takes particular pains *not* to get that for which he came West. This is no exaggeration. It is common, every-day experience. He is after air — pure air — and then gets damp, impure air — all for the lack of wise direction. Selection of a proper abode is one of the things that the local doctor must consider.

The question of proper food is another matter of prime importance. The invalid must have good, nutritious food — rare meats, plenty of milk, eggs, good bread and butter, fresh vegetables. This is not always an easy matter to regulate. Every boarding-house does not furnish good food in abundance. The local doctor must have a wise supervision of this factor in life. He should have lived in the community long enough to know where good food and a good home are to be obtained — “Fresh air and plenty of it, good food and rest.”

The question of exercise for the invalid is a much debated one, but it is one on which I have very positive opinions. At the start, “Fresh air, without exercise,” is my rule; or, if exercise is allowed, it must be very moderate. Have the patient so situated that he can sit on some piazza where he will be sheltered from the wind, and where he can breathe in the air and bask in the sunshine by the hour. It is tedious work, I know. But, then, an invalid's life is not the perfection of existence, and I find that one soon becomes accustomed to a *quasi* monotony. It furnishes large opportunity for reading and for pleasant converse if the patient should have one of his family or a friend along with him. A pleasant *loggia*, with a southern exposure, overlooking the plains and the vast reach of mountain range, as enjoyed by one of my patients, suggests itself to my mind as an almost ideal location. For there one gets shelter from the wind, sunshine, plenty of fresh air, and an immense and grand view.

Gentlemen, if you had seen the bad results of over-exertion, especially in the stage of early residence, that I have seen, I think that you would come to my way of thinking and would enjoin “Fresh air, without exercise.” One must be very insistent upon this point, especially in altitudes like those of Colorado. I have seen such dire results; hemorrhages, extension of tubercular invasion, death from over-exertion, that I have come to be very insistent on this point, “Fresh air, without exercise”; no long walks, no horse-back riding, no mountain climbing, no bicycle riding, no exertion that is going to fatigue, that is going to make the heart, already laboring, beat too rapidly, or to cause the patient to get out of breath or to make him fatigued.

Then, after a time, exercise is to be taken up — in

moderation, extreme moderation — a carriage drive, and then a longer, until the whole forenoon, and then the afternoon itself, is spent in driving; or a short walk, and then a longer, and then a longer, until the patient is doing his miles. After this, horse-back, moderately at first and always with caution — I have seen too many hemorrhages, too many reverses following undue horse-back exercise not to view it with some misgivings. In fact, one has to feel his way on the question of exercise and to increase the amount quite gradually. This may seem unnecessary to the ordinary practitioner and an excess of caution, but all that I can say is, “Come and see.” Results justify the means.

Then the local doctor must have more or less of a supervision of the invalid's goings and comings. He is not to keep late hours. He is not to enter much into the social life. It is not his day for wining and dining, for late card parties, for sitting in close rooms, smoking his life away; early hours and plenty of sleep are to be enjoined. The invalid's life is to be systematic and regular. The recovery of health is not a pastime. It is a business, requiring unremitting attention, constant daily care and a stout heart. Grit on the part of the patient is a requisite. “It requireth courage bold,” and this the local doctor can often evoke by the timely word, the encouraging word.

The details, with reference to the proper conduct and cure of consumption, are so various, requiring such adaptation to the individual case that I cannot attempt to enumerate them. Eternal vigilance is the price of recovery. One does not jump, full-armed, into a recovery, but the process is like gaining a fortune — save the nest-egg and keep adding to it. The man who spends, as he makes, is not apt to get rich; no more is the invalid who uses up his surplus strength as he gains it likely to get well.

“Throw physic to the dogs” may, in some cases, be wise advice; but it is likely to be very unwise.

I am no advocate of injudicious and wholesale medication. I have seen great harm come from it. I often wonder how the patient is able to get in all the doses that I have known to be ordered for him, in one day. But it is nonsense, arrant nonsense, to condemn all medication because of these abuses. If one is able to increase the appetite, to improve the digestion, to regulate the bowels, to stop the night-sweats, to lessen the cough without interfering with important functions, to loosen the expectoration, to increase the weight, to help elimination, etc., it would be foolish for him not to attempt to give this assistance, because, forsooth, the results are to be obtained through the agency of drugs.

Herein will lie, to a very considerable extent, the skill of the local doctor; and in the wise direction of his patient, and the judicious exhibition of remedies, he will be able to second the efforts of nature and the efficacy of climate in the repair of destruction caused by disease.

The remarks that I have offered may seem trite and exceedingly commonplace. They are every-day observations, and contain nothing new or startling; but, I see them so often disregarded — I find, almost daily, a violation of general principles so flagrant — that I feel harm cannot come from calling them again to the attention of this Association, and through it to the attention of the medical profession at large.

In the medical world, as in the world at large, the admonition holds good:

"Those friends thou hast, and their adoption tried,  
Grapple them to thy soul with hooks of steel;  
But dull not thy palm with entertainment  
Of each new-hatched, unfledged comrade."

## Clinical Department.

### INTESTINAL OBSTRUCTION FROM A LARGE GALL-STONE: OPERATION, RECOVERY.

BY FRANCIS B. HARRINGTON, M.D.,  
Visiting Surgeon at Massachusetts General Hospital.

MRS. M., of healthy parentage and of previous good health, began to have so-called "bilious attacks" four years ago. At this time she also began to have frequent attacks of diarrhea. She is fifty-nine years of age. She has never been jaundiced. For ten days before her acute illness she had slight pain in the right hypochondrium, but kept about her usual affairs.

She dates her sickness from July 7, 1898. After eating lobster salad on that day she began to have a feeling of discomfort in the epigastrium. Two days later vomiting and purging began, with severe pain in the right hypochondrium. The vomiting and diarrhea continued for several days.

Dr. E. F. Cummings, of Beachmont, was called to see her on July 12th. At that time there was no fever. The vomitus was at first dark, then green, and finally became fecal. The diarrhea stopped on the 16th. On July 17th Dr. H. F. Vickery was called in consultation with Dr. Cummings. A diagnosis of intestinal obstruction was made. Dr. Vickery found the conditions as mentioned, with tenderness over the liver and a sense of resistance below the right ribs. There was no tenderness elsewhere. The pulse was rapid and weak. The vomiting had been fecal, and there were colicky pains since July 15th. There was slight abdominal distention.

I saw the patient on July 19th. She had then been vomiting for ten days, with fecal vomiting for four days. There had been diarrhea for seven days, and then complete absence of movements for three days. The pulse was rapid and feeble and the abdomen slightly distended. There was frequent vomiting. I advised exploratory laparotomy for obstruction, which I thought was probably due to malignant disease.

On making digital exploration after the abdomen was opened, no evidence of malignant disease was discovered. The intestine was carefully inspected and upon drawing out a portion of the small intestine, probably the ileum, a mass was seen filling its lumen. The intestine was cut open longitudinally and a large gall-stone was removed. The intestine was quickly closed and the abdominal incision united without drainage. Four hours after the operation there were copious fecal dejections. The patient made a rapid recovery, and has been in good health since.

The gall-stone is in shape a cylinder, with a circumference of three and one-half inches, a diameter of one and one-eighth inches and a length of one inch. It weighs when dry 170 grains. Its ends suggest facets.

This stone without doubt was formed in the gall-

bladder. The latter organ became inflamed and attached to the intestine. The gall-stone then sloughed into the intestine and caused the symptom which arose before complete obstruction took place. When the stone reached the position at which it was found, nothing could pass and symptoms of obstruction appeared. A fatal result would unquestionably have occurred if the obstruction had not been removed by operation.

## Reports of Societies.

### AMERICAN CLIMATOLOGICAL ASSOCIATION.

THIRTEENTH ANNUAL MEETING, LAKEWOOD, N. J.,  
MAY 12 AND 13, 1896.

THE President, DR. JAMES B. WALKER, of Philadelphia, made the introductory address on

#### SOME OF THE DIFFICULTIES OF CLIMATO-THERAPY.

He classified these difficulties as follows:

- (1) The uncertainty of the composition of the agent.
- (2) Lack of sufficient data concerning many American stations.
- (3) Difficulty of choice for the individual case.
- (4) Lack of general information as to the elements of climate affecting health, and the consequent lack of ability to wisely use the agent.

Dr. Walker expressed the opinion that the closed treatment of phthisis with complete supervision and explicit personal care adapted to the particular case gives as good results as the climatic, and that the future will not consign the incipient phthisical to a life of exile from home and friends.

DR. FREDERICK I. KNIGHT, of Boston, read a paper on

#### LARYNGEAL VERTIGO,

and related the case of a patient.

The points to which Dr. Knight invites attention and discussion were these:

- (1) That cases of loss of consciousness after cough are not all produced in the same way.
- (2) That the condition may be due to syncope, or *le petit mal*.
- (3) That there is a general predisposition to one or the other of these conditions.
- (4) That the exciting causes are various, sometimes organic and sometimes functional.

If we take a comprehensive view of all cases on record, we shall find that the cerebral condition can sometimes be described as syncope, which has been produced by disturbed cerebral circulation, such as we have from long-continued rapid breathing, and which was formerly employed to produce momentary unconsciousness for minor surgical operations; and sometimes it can better be described as an exhibition of *le petit mal*. In some cases there is not the slightest evidence of epilepsy, and in others we find convulsive movements of the limbs, head and face, and in a few cases mental confusion after the attack.

We shall also find that there is a *predisposition* to syncope or *le petit mal* in these cases, as shown from their occurrence from other than laryngeal causes. Among the 15 collected cases which formed the basis of Dr. Knight's paper in 1886 there was one (Krishaber's) in which the first loss of consciousness oc-

curred from sudden emotion, and was not preceded by cough. Subsequent attacks, though apparently caused by emotion, were preceded by cough; and Gray's patient had been subject, seventeen years before, after a scalp wound by a bullet, to losses of consciousness like those he had later after a cough; and the patient, whose case is reported above, had one attack without cough.

DR. W. F. R. PHILLIPS, of the Weather Bureau, Washington, read a paper on

#### SENSIBLE TEMPERATURE,

which is a term to express the sensation of atmospheric temperature, as distinct from the same temperature as indicated by the ordinary thermometer. The sensation of temperature is ultimately a reflex of the rate of heat dissipation, and is determined by the state of heat exchange between the body and its environments. When the conditions are such that the balance of exchange is in favor of the environment the sensation of cold is experienced; when it is in favor of the body that of warmth is felt.

Some of the values to be determined are the coefficient of emissivity of the skin, the coefficient of the convectional effect of the wind, the coefficient of conductivity of the average seasonal clothing, and the coefficient of sweat excretion under different temperatures. The heat lost by cutaneous evaporation will be greater in amount the higher the temperature; and Dr. Phillips was inclined to think that evaporation of perspiration does not become, in a person at rest, an agency of importance in heat loss until the air temperature rises above 70° F. Above this degree there is little doubt of the immense value of cutaneous evaporation as a means of heat elimination, and when the air rises in temperature to that of the body, evaporation is the only means by which the surplus heat can be dissipated and the temperature of the body prevented from passing above the point of physiological safety.

We have no index of sensible temperature, and the use of the indications of any one meteorologic instrument for such purpose can only give under the most favorable conditions but a rude approximation of the truth and one too remote to be of much practical service.

DR. ANDREW H. SMITH, of New York, said that it might be possible to train a person so that under fixed conditions he could judge accurately by his sensations as to the thermometric readings, after which under different conditions the corrections necessary to make his guesses tally with the thermometer would be a measure of the difference between the sensible temperature and the height of the mercury.

DR. PHILLIPS stated the necessity of deciding upon some normal or datum mark or zero from which we may take our departures in whatever directions the nature of the subject investigated requires and referred to Mr. J. W. Osborne's investigations in which an attempt was made to give numeric values to his subjective temperature scale.

DR. E. FLETCHER INGALS, of Chicago, read a paper on the

#### TREATMENT OF CERVICAL TUBERCULOUS ADENITIS.

It was formerly his practice to treat cases in which the glands were not greatly enlarged with the iodides or chloride of calcium, but he had latterly used guaiaco or the carbonate of creosote, and injected these glands

from time to time, with a solution of carbolic acid of from two to five per cent. strength. Severe cases he referred to a surgeon. During an experience of twenty-five years he had seen a fair proportion of good and poor results in these patients when treated by medicinal means, and in those cases that seemed entirely refractory to such measures. He had seen a number of cases of suppuration in enlarged cervical lymphatic glands, and had tried various methods of treating the cavity before opening it, such as the repeated injection of solutions of carbolic acid, and emulsion of iodoform, but did not at present recollect any case, excepting the one now reported in which a successful cure of the suppurating cavity was made without resort to free opening. In the present case a few injections resulted in complete cure. It has been Dr. Ingals's custom to begin with weak solutions of not more than 15 or 20 per cent. strength, and gradually increase to 35 or 40 per cent. strength. He had gone beyond this several times, but 45 or 50 per cent. will usually produce a slough. Dr. Ingals found that even a 15-per-cent. solution, of the lactic acid alone, generally causes considerable suffering, but when combined with from two to five per cent. of carbolic acid it causes but little pain. In some cases he had injected a four-per-cent. solution of cocaine about three minutes before the lactic acid was employed. By so doing the immediate pain otherwise caused by the lactic acid has been prevented and the combination of lactic acid with carbolic acid has prevented subsequent suffering of any considerable degree. He usually injected from 20 to 30 minims of the solution at one treatment, and does not repeat it for a week or more. One case proves nothing at all, but his experience with lactic acid in this and other cases had been very favorable.

DR. E. O. OTIS, of Boston, showed Dr. F. M. Briggs's self-retaining drainage canula devised to prevent the scar from cervical abscess and spoke of his satisfactory results in the use of it.<sup>1</sup>

DR. W. D. ROBINSON, of Philadelphia, had used, with benefit, ichthyol applied under a covering of lamb's wool; the carbonate of creosote had given, after prolonged trials, little result beyond apparently checking the progress of a progressive enlargement. He believed that the best results come from the free use of sunshine.

DR. ISAAC HULL PLATT described the physical characteristics of Lakewood as a resort, with reference particularly to its water-supply, soil and drainage.

#### THE POCONO PLATEAU.

DR. L. D. JUDD, of Philadelphia, read a paper calling attention to the region of the Pocono Mountains, situated in Monroe County, Pa., particularly to that section known to geologists as the Pocono Plateau. The Pocono Mountains constitute a group extending northeast and southwest a distance of thirty miles or more, and presenting an elevated plateau about ten miles in width. The altitude in the neighborhood of Mount Pocono Station is about 1,800 to 2,000 feet. It is only three and a half hours by rail from New York City and four and a half from Philadelphia and much higher than the Delaware Water Gap.

Dr. Judd advocated this region as a resort for patients with throat and chest troubles, hay-fever and asthma.

<sup>1</sup> See Boston Medical and Surgical Journal, May 2, 1895.

DR. MARK A. RODGERS, of Tucson, read a paper on

ADVANTAGES OF THE CLIMATE OF ARIZONA IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

SECOND DAY.

The morning of the second day was devoted to a discussion of

THE TREATMENT OF HEMOPTYSIS,

opened by DR. CHARLES E. QUIMBY, of New York, followed by papers on that subject by DR. COOLIDGE, of Boston, DR. BABCOCK, of Chicago, DR. SOLLY, of Colorado Springs, and DR. MUSSEY, of Philadelphia.

The subject excited general discussion.

DR. F. FREMONT-SMITH, of St. Augustine, advocated the use of tourniquets.

DR. S. A. FISK, of Denver, advocated the use of turpentine externally and oil of erigeron.

DR. WALKER, of Philadelphia, spoke of the use of turpentine internally.

The practice of using ergot was quite generally condemned. Rest, the use of ice and atropia, and the free use of opium and gallic acid were favored.

DR. H. F. WILLIAMS, of Brooklyn, said that he used no measures to restrict hemorrhage, as he believed that it was an effort of nature to expel pathological products that were likely to set up septic or toxic conditions in the diseased structure. Dr. Williams quoted the well-known views of the late Dr. J. R. Leaming in support of his position.

The following were elected to membership at the business meeting: Dr. Hobart A. Hare, Philadelphia, Pa.; Dr. John L. Heffron, Syracuse, N. Y.; Dr. J. Madison Taylor, Philadelphia, Pa.; Dr. H. H. Whitcomb, Norristown, Pa.; Dr. Paul T. Kimball, Lakewood, N. J.; Dr. Charles L. Lindley, Lakewood, N. J.; Dr. Henry P. Loomis, New York City; Dr. C. F. Gardiner, Colorado Springs, Col.; Dr. Henry H. Schroeder, New York City; Dr. Wm. F. Dudley, Brooklyn, N. Y.; Dr. David H. Bergey, University of Pennsylvania, Philadelphia, Pa.; Dr. E. P. Bernady, Philadelphia, Pa.; Dr. W. A. Campbell, Colorado Springs; Dr. Mark A. Rodgers, Tucson, Arizona.

DR. JOHN C. MUNRO, of Boston, read a paper on THE INFLUENCE OF CLIMATE ON GENITO-URINARY TUBERCULOSIS.

It embodied the results of a collective investigation or inquiry among the members of the Association stationed in different parts of the country. There were seventy-five responses.

Of the reply to the first question, "Are patients with tuberculosis of the kidney, bladder, epididymis, prostate, or vesiculæ, benefited or injured by climatic treatment?" there is scarcely any doubt. There is no reason why the situation of the disease should form an exception to the rule, especially if the general resistance and the nutrition are improved. The benefit is, of course, indirect for the most part, but it can be materially aided by proper local treatment, not necessarily operative, in the majority of cases.

The rate of improvement is not so rapid as it is in pulmonary phthisis.

The answers to the next question, "Do patients undergoing climatic treatment for pulmonary tubercu-

losis develop, commonly, a genito-urinary tuberculosis when the pulmonary lesions are disappearing?" showed that such a development was very rare. Four correspondents reported having seen single cases, only, during many years of practice, while primary genito-urinary tuberculosis is comparatively unknown, a condition far different from that which obtains in tuberculous regions.

"Does pulmonary tuberculosis tend to develop in patients undergoing climatic treatment for genito-urinary tuberculosis?" To this question there was a general belief that there is very little inter-relation between the disease in the lungs and in the uro-genital tract.

"After apparent cure from genito-urinary tuberculosis can patients ever return to their homes?" Probably to a small extent in selected cases when the cure has lasted for many months, where the home-surroundings will be of the best, and provided the patient is persistently and carefully watched.

"Do patients with advanced genito-urinary tuberculosis, for example, abscess of the kidney, testes, vesiculæ, etc., ever recover their general health?" Occasionally with the aid of surgery, advanced (abscess) cases do recover, but it is doubtful if the proportion is much greater in the healthy than in the unhealthy climate.

"Must the same precautions, as regards exercise, diet, rest, etc., that are given to phthisical patients, be given to patients with genito-urinary tuberculosis when emigrating to high altitudes?" This was answered affirmatively. There is no one climate or locality suitable for all cases, the general rule being that where pulmonary cases do well it is safe to send genito-urinary cases. When, however, the disease is limited to the kidneys or bladder, a climate, equable, warm and not too dry should be selected; where outdoor life is most possible and where the drinking-water is of the best.

DR. NEWTON: While in the United States Army I served eight years in New Mexico, the Indian Territory, and Northern Texas, and while in that region I was impressed with the scarcity of Bright's disease. No doubt this diminished liability to renal disease is because the increased activity of the skin and the lungs in the exceedingly dry atmosphere takes some of the work off the kidneys. At least such an explanation was offered once by Dr. H. C. Wood, who thought it might be advantageous to send patients with nephritis into the dry atmosphere of the Rocky Mountains or their foothills. Of course it is highly important while a resident of the arid regions that the drinking-water should be as pure as possible. It should not contain gypsum (a very common ingredient) nor other mineral or earthy substances which may irritate the kidneys or bladder. I do not believe that people travelling for their health are careful enough about their drinking-water. If all the water which the new-comers use should be boiled and filtered there would be probably little or no so-called mountain fever which so commonly attacks the unacclimated.

One case that came under my observation had a tubercular consolidation of one apex and had been sent away from home; while travelling he developed an appendicitis, for which an operation was done, and he recovered not only from the operation but his lungs were found to have healed up. It was not long, however, before tuberculosis of the genito-urinary tract

set in, and his health is now in a precarious condition. I am sorry to hear that Dr. Munro considers the prognosis in genito-urinary tuberculosis so unfavorable. From my reading, especially from several papers that I have recently seen, I had been led to think that a number of these cases at least would recover.

DR. JAMES B. WALKER: While having no personal experience with the climatic treatment of cases of genito-urinary tuberculosis I may say that the general tenor of Charles Theodore Williams's investigations is that the presence of albuminuria or of disease of either the liver or kidneys is a contraindication to the high-altitude treatment of pulmonary phthisis for the reason that before acclimatization there is a decided reduction in the amount of urine excreted from the kidneys. There is, no doubt, much to be gained in treating these diseases by the proper use of mineral waters, and we may make almost any climate acceptable in their treatment with the use of these adjuncts, so that although high altitude climates may have their objections *per se*, their great value as antagonistic to tubercular vulnerability may be utilized in this as well as in other forms of tuberculosis by the proper administration of water and other correctives.

DR. SCHAUFFLER: In the few cases which I have met with of this nature there was one which had a tubercular epididymis along with tuberculosis of the lung. This man was sent to El Paso, Texas, and he apparently recovered from his tubercular condition. It was one of those cases of remarkable recovery of general health and disappearance of local signs of disease apparently directly and solely due to change of climate without medication. Heard from this patient at the end of three years.

I also know of a man who had tolerably advanced pulmonary tuberculosis, with kidney trouble, pus in the urine, and tube-casts, who went to Glenwood Springs, Colorado, and is doing well at the end of five years. His renal trouble seems to be at a standstill; and he probably has one sound kidney. He is engaged in business in Colorado.

It was a revelation to me that climatic influence should be so efficacious in a case like that. As to the lungs, of course, there is no trouble in explaining the *modus operandi* of climate, but when we come to genito-urinary tuberculosis the explanation is not such an easy matter. I must say that I am decidedly in favor of climatic treatment in genito-urinary tuberculosis.

DR. INGALS: I have been under the impression that it is in hot, dry climates where most benefit is derived in cases of this kind. The late Dr. H. A. Johnson once said that "tubercular patients did well where weeds do not grow," as, for example, in Arizona.

DR. CURTIN: I should like to ask Dr. Munro if he has made any inquiry as to what extent drinking-water influences these cases?

DR. VINCENT Y. BOWDITCH, of Boston, presented a paper entitled,

A PLEA FOR MODERATION IN OUR STATEMENTS REGARDING THE CONTAGIOUSNESS OF PULMONARY CONSUMPTION.<sup>2</sup>

(To be continued.)

A NEW JOURNAL. — Dr. José E. Calvo, of Panama, has established a monthly journal, entitled *Revista Mensual de Medicina, Cirugía y Farmacia*.

<sup>2</sup> See the Journal, vol. cxxiv, page 637.

THE BOSTON

## Medical and Surgical Journal.

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### THE CLASSIFICATION OF THE DYSPEPSIAS.

THE symptom-group constituting dyspepsia most forcibly, most frequently and constantly commands the attention of physicians and laymen, and has been the subject of many classifications. Hippocrates only indirectly treats of dyspepsia. Galen invented the terms *bradydyspepsia* and *apepsia*, as spoken of their symptoms and remote effects. Cullen was the first to write of the dyspepsias under the two heads of idiopathic and symptomatic. Broussais saw only gastritis and gastro-enteritis at the basis of every dyspepsia. A reaction had already set in when Beau taught the primarily functional character of dyspepsia, the influence of the nervous system in its production, and the intimate connection which exists between the disorders of the stomach and the maladies of decadence. Then came the dogma of dilatation of the stomach — the dilatation being the lesion and the dyspepsia the consequence; soon destined to be eclipsed by the chemical theories which led to the famous declaration, "Les dyspepsies sont chimiques ou elles ne sont pas" (Germain Sée).

One of the latest attempts at a rational classification is that of Albert Robin whose elaborate series on the dyspepsias is being published in the *Bulletin Général de Thérapeutique*.

"There is dyspepsia," he says, "whenever there is any disturbance of the gastric digestion. Now as there is no gastric affection which is not accompanied with functional troubles of the organ, the word *dyspepsia* sums up the entire gastric pathology."

The first general division is that of Cullen, into dyspepsias that are primary or idiopathic, and those that are symptomatic of a general or local affection.

Idiopathic dyspepsias are (1) dyspepsias due to vices of alimentation, (2) dyspepsias due to troubles of gastric innervation, (3) dyspepsias of mechanical origin, (4) dyspepsias of medicinal origin, (5) dyspepsias due to professions, (6) dyspepsias due to conditions of climate,

(1) Vices of alimentation pertain to the manner of eating, to what is eaten, to what is not eaten, comprehending all faulty habits, excesses and defects of alimentation, the fruitful sources of much of the digestive suffering which is daily witnessed.

(2) Dyspepsia by trouble of innervation is exemplified whenever nervous perturbations entails disorders of secretion or muscular movements of the stomach (mental overwork, care, worry, depressing emotions, intense thought and study after meals, etc. "L'homme qui pense le plus est celui qui digère le moins").

(3) Dyspepsias of mechanical origin are such as result from a tight corset, sitting all day in a bent posture at the desk, etc.

(4) Climatal influences, such as excess of heat and cold and confined air, are well-known causes of dyspepsia.

(5) Under the head of medicinal dyspepsias are included such as are due to the abuse of mineral waters, of tea, of iodide of potassium, etc.

(6) Dyspepsias due to professional causes are often exemplified in the workmen in coal mines (from inhalation of coal dust), and rubber factories (from absorption of carbon disulphide), and in persons who lead too sedentary a life (book-keepers, journalists, etc.).

The "secondary dyspepsias" are: (1) dyspepsias symptomatic of diseases of the stomach (chronic gastritis, ulcer, cancer, dilatation); (2) dyspepsias due to hepatic and intestinal troubles (biliary congestion, cirrhosis, duodenitis, catarrhal enteritis, etc.); (3) dyspepsias of cardiac origin (due mainly to the anemic and other circulatory troubles); (4) dyspepsias of genito-urinary origin; (5) dyspepsias due to diseases of the nervous system (gastric crises of tabes, dyspepsia accompanying neurasthenia, etc.); (6) dyspepsias due to anemia (the primary anemias are doubtless sometimes the consequences of a pre-existing dyspepsia, but they may appear first and be the cause of the digestive troubles, and the proper treatment of the chlorosis or other anemia may cure the dyspepsia); (7) dyspepsias due to tuberculosis, cancer, gout and rheumatism.

Robin insists on the absurdity of establishing fixed rules of treatment of dyspepsia when the causes are so numerous. The dyspepsia caused by tuberculosis or by gout is not to be treated simply as dyspepsia, but as an epiphenomenon of the underlying dyscrasia. On the other hand, if we have to do with an alcoholic dyspeptic, it will not be enough simply to suppress the alcohol in order to make the stomach well, for material lesions exist which will long survive the alcoholism.

The labors of our predecessors to institute a rational classification and treatment of dyspepsia have resulted in little but a chaotic array of symptom-treatments, for the most part useless and dangerous, as is all medication that is exclusively symptomatic. An illustration of this is seen in the vogue which internal antiseptics has had, as promulgated by Bouchard for gastric

fermentation; this mode of treatment, according to Bardet and others,<sup>1</sup> has not been a brilliant success. The same may be said of the administration of large doses of sodium bicarbonate in acute attacks of "hyperasthenic dyspepsia with hyperchlorhydria"; the utility of this treatment, says Robin, can no longer be defended.

The chemical school has studied the gastric juice and made classifications according to its richness in HCl. They have given us *hyperchlorhydria*, and *hypochlorhydria* and *anachlorhydria*, besides another group of dyspepsias from acids of fermentation (lactic, butyric, etc.). As for the pepsin, they have made little account of it, not knowing what rôle to assign to it in the troubles of secretion. To the chemical dyspepsias they have added the anatomical dyspepsias of nervous or muscular origin (*motor* or *nervous* types, and *nervo-motor* types). This is a notion as vague as the preceding, for in every malady of the stomach the secretion is influenced not only by the nervous system, but also by the state of the muscular coats of the organ, just as the nerves and muscles of the stomach are influenced by the state of the digestion. It is, then, utterly impossible to consider apart the rôle of the nerves and that of chemism, for both compose a solidarity.

M. Hayem in his first studies on stomachal chemism endeavored on this basis to effect a classification of the dyspepsias, and he established a certain number of forms of chemical dyspepsia. More recently he has given a new classification, taking pathological anatomy as his basis, and constructing dyspepsia on gastritis, the former being the clinical expression of the latter; in other words, it is a return to the doctrine of Broussais. This doctrine will never commend itself to clinicians; it is one-sided and partial. Robin gives the more rational conception in insisting that "the lesion is always consecutive to the dyspeptic troubles; in the onset these manifest themselves in a stomach physiologically sound. Every dyspepsia, then, starts in a functional disorder. With the progress of the disease the multiple functions of the organ more and more undergo alteration; the chemical reactions, the derangements of secretion, of movement, and of innervation of the stomach are aggravated and inextricably interblended; at length the overjaded organ refuses service and there is gastritis.

Consequently, the therapist will find his best guide in the functional disturbance which exists, and which he may be called upon to treat before any visible lesion exists. He will always take due account of the chemical reactions and quality of the gastric juice, for thereby data are obtained which furnish useful indications as to the state of the gastric function; data which alone are useless for purposes of classification. In short, for the therapist, the only useful classification is the physiological. From this point of view, the stomach is anatomically and physiologically a solidarity, and when we study the functional reactions,

<sup>1</sup> Soc. de Thé., February 11, 1896.

we see that the dyspepsias manifest themselves under three characteristic types: (1) Exaggeration of function; (2) Insufficiency of function; (3) Perversion of function. It is mainly under these three heads that Robin treats of the therapeutics of the dyspepsias.

#### DISCIPLES OF FATHER KNEIPP IN CENTRAL PARK.

THE disciples of Father Kneipp, of Woerishoven, Bavaria, have officially requested the Park Commissioners to designate some green lawn in Central Park on which they can go Kneipping during the early morning and late evening hours. It seems that there is a regular Kneipp Verein in New York, with over one hundred members, which has its headquarters in Bond Street, and it was in behalf of this organization that the Park Commissioners were asked to take action. Jersey City also has a Kneipp club, with a membership of about four hundred members, which was organized by Dr. Faber, a physician of that place. According to the Secretary of the New York Kneipp Verein, members of the Society who have gone barefoot in Central Park heretofore have been arrested as cranks, or for merely walking on the grass. He says there are at least five thousand persons in the city who believe in the Kneipp system of treatment, many of whom have been patients under it abroad. He also states that Father Kneipp himself is coming to this country in September.

#### MEDICAL NOTES.

**CHOLERA IN EGYPT.**—There were 1,091 deaths from cholera in Egypt during the week ending August 15th, bringing up the total number of deaths to 14,755.

**THE AMERICAN DERMATOLOGICAL ASSOCIATION.**—The twentieth annual meeting of this Association will be held at the Hot Sulphur Springs of Virginia, September 8, 9 and 10, 1896.

**THE GIFT TO THE ROYAL VICTORIA HOSPITAL.**—The Royal Victoria Hospital in Montreal has received from Lord Mount Stephen and Sir Donald Smith the sum of eight hundred thousand dollars to form a permanent endowment.

**SUFFERING IN LONDON.**—A serious shortage in the water-supply of this city is reported both by the lay and medical press. In the eastern districts of the city the amount furnished is said to fall much below what is required for the comfort of the population, particularly the improvident and poorer classes.

**MEDICAL HEROES.**—A hall has been established in the Val de Grace Hospital in Paris, where the names of French medical men who died in the performance of their duty are inscribed on marble tablets. A list of 143 practitioners has just been placed on its walls, all of whom perished in the yellow fever epidemic in San Domingo, 1801-1803.

**INTERNATIONAL CONGRESS OF DERMATOLOGY.**—The third International Congress of Dermatology, held in London on August 5th, 6th and 7th, proved a successful and pleasant meeting. On the last evening the foreign visiting members were given a dinner at the Hotel Cecil, about two hundred being present at the banquet. Mr. Jonathan Hutchinson presided; and among the long list of speakers responding to the toast of International Dermatology was Professor J. C. White, of Boston. The question of having another congress was decided favorably, and invitations were extended from Berlin, Paris and New York. It was urged in favor of Paris that the next meeting should take place in 1900, the year of the Exhibition when the new wing of the St. Louis Hospital would be formally opened. The decision was made by acclamation in favor of Paris, and Dr. Besnier was unanimously chosen President of the Congress for the year 1900.

#### BOSTON AND NEW ENGLAND.

**A DECISION OF INTEREST TO MEDICAL EXAMINERS.**—The death of Mrs. Ellen Crampey at Grape Island, which lies in Plum Island River between Ipswich and Newburyport, in August, was the occasion of a curious medico-legal complication, resulting in an undertaker being fined ten dollars by Trial Justice Sayward of Ipswich. When the body was found, Medical Examiners Hurd, of Newburyport, and Clark, of Ipswich, were summoned; and a Newburyport undertaker, who was on hand, by agreement of the two examiners, took the body to Newburyport, where Dr. Clark, of Ipswich, assisted by Dr. Hurd, performed the autopsy. But owing to the fact that Grape Island is really in Ipswich and not in Newburyport, it was suggested that the undertaker had acted illegally in removing the body from the town in which death occurred without permission from the board of health of that town. The fact that he was ordered to do so by the medical examiner, and that he was the only undertaker who was on hand with the proper appliances for removing the body, had no weight with the justice, who fined him as above stated.

**TYPHOID FEVER OUTBREAK AT EAST BARRINGTON.**—An outbreak of typhoid fever occurred during the latter part of July in the town of East Barrington, N. H. The cases were all traced to a single source. The first case was an unrecognized one, the patient being unwell but helping about the house and doing part of the milking. It is supposed that he must have in some way contaminated the milk, as by going to stool and not washing his hands before returning to his milking. The water-supply was carefully examined and found to be all right. On a Friday evening a party was given at the house and the guests were given ice-cream made at home from the milk-supply above referred to. Within the next ten or fourteen days fourteen of the guests came down with typhoid fever—eight in the town of Barrington, of whom one died; two in Lee; one each in Dover, Rochester and Woodbury, N. H., and one in Haverhill, Mass. All



of these out-of-town cases were guests at the party. No other cases occurred in the town, and all were partakers of the cream.

#### NEW YORK.

**YELLOW FEVER AND SMALL-POX AT HAVANA.**—Health Officer Doty, who returned from his trip to Cuba on August 17th, reports that he found that there was much yellow fever and small-pox in the city of Havana and its suburbs, and that the sanitary conditions there were very bad. All the sewage, he says, is emptied into the bay, and the tide is not sufficient to carry it to sea. Two points in particular were noticeably offensive, namely, opposite the Regna docks and in the vicinity of the military hospitals. Any vessels arriving here which were loaded in these places, he states, will be subjected to the most rigorous quarantine. During his visit, Dr. Doty secured the services of competent medical men in Havana, Cienfuegos and Santiago, who will regularly report to him the sanitary condition of the towns.

**HEAT T. XINES.**—Dr. Ira T. Van Gieson, Director of the State Pathological Institute, announces, as the result of recent investigation made by him and his associates, Drs. Lambert and Lewin, the apparent discovery that the fatal effects of heat-stroke are not really due to the sun's rays, but to a peculiar toxine developed by atmospheric conditions. He does not claim that the proofs are as yet sufficient to demonstrate such a theory, but the experiments thus far made, in which rabbits were destroyed by the inoculation of material taken from the blood of human patients suffering from heat-stroke, would seem to render it probable.

**DEATHS FROM HEAT IN NEW YORK STREETS.**—The official records show that in four days during the recent heated term no less than 1,258 horses were reported by the police as having died on the streets.

**DEATH FROM THE HEAT AT THE AGE OF 102.**—One of the victims of the hot weather was John McKenzie, of Jersey City, who died at the venerable age of 102 years and 5 months, having been born on March 20, 1794. He was a native of Ireland and, it is said, was never in his life attended by a physician until the day on which he died.

**A HOSPITAL TO BE CLOSED FOR LACK OF FUNDS.**—The Board of Trustees of the Mount Vernon Hospital, one of the most prominent charitable institutions of its kind in Westchester County, have announced that the hospital will be closed on September 1st, as there are no funds in the treasury and no prospect of contributions in the future. The hospital building was erected in 1893, at a cost of about \$20,000, and since then a large number of patients have been cared for in it. Lately, however, there has been considerable discussion among the contributors to the funds of the institution in regard to its ownership, maintenance and management, and as a result they have all discontinued their donations.

**A BRUTAL CASE OF SELF-MURDER.**—In the case of John Mueller, a farmer, near Egg Harbor City, New Jersey, whose dead body was recently found sitting in a chair in his home, with half of his face blown away, while a shotgun was lying beside him, the coroner's jury rendered a somewhat remarkable verdict: stating that the deceased "came to his death by feloniously, maliciously and brutally murdering himself."

**DEATH OF DR. GULEKE.**—Dr. Herman F. Guleke, a prominent physician of New York, especially in German circles, died at Sheepshead Bay, Long Island, on August 18th. The cause of his death was a cancerous affection of the throat, from which he had suffered for a considerable time. Dr. Guleke was born in Dorpat, one of the Baltic provinces of Russia, in 1836. After studying in his native country and at Berlin, he came to this country, where, in 1858, he was graduated from the New York Medical College. For quite a number of years he was attending physician at the German Hospital and also at Mount Sinai Hospital.

**DEATH OF THE FOUNDER OF THE NEW YORK FOUNDLING ASYLUM.**—A notable character has passed away in Sister Irene, Superior of the New York Foundling Asylum, who died at that institution on August 14th. She was born in London in 1823, and came to this country when she was nine years old. She was the founder and organizer of the New York Foundling Asylum, and also of the beautiful Seton Hospital for Incurables, located at Spuyten Duyvil, for which by her own efforts she raised \$350,000. In her long life as a Sister of Charity she is said to have collected and disbursed nearly \$1,000,000 in all. During the years in which Sister Irene had been in charge of the Foundling Asylum some 28,500 children passed through its doors, and 6,000 unfortunate mothers, with their infants, were provided with homes.

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### Miscellany.

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#### SOME VASSAR ATHLETIC RECORDS.

FROM the time of its foundation Vassar College has required of its students a certain amount of gymnastic exercise, both in the in-door gymnasium and in some form out of doors. In the earlier years horseback riding was a regular part of the curriculum, every girl being taught horsemanship; but the expense was found to be too great, and this training was abandoned. Tennis and the milder out-door sports soon took the place of the riding; and during the last five years the advantages of the finely equipped new gymnasium have done much to advance the athletic powers of the students.

An interesting account of this side of the college life is given by Mr. Scoville in a recent number of the *Outlook*, and is a refreshing contrast to the former newspaper accounts of the number of pickles, pies and pancakes annually consumed. Tennis, basket-ball, swimming and bicycling are the popular sports at

present, although golfing has begun to claim its votaries. According to Mr. Scoville,

"Another out-of-door recreation which seems to be peculiar to Vassar and Wellesley is 'birding.' 'Birding' (which, by the way, is used in a decidedly different sense at our male colleges) is usually indulged in at about sunrise, when the matin-song of the birds begins. Armed with opera-glasses, the 'birdists' steal through swamps and thickets, and, by studying the singers in their native haunts, acquire a far greater knowledge of ornithology than can be learned from books."

The general field and track athletics are by no means neglected; and the following figures given as the Vassar "records" in various events are by no means to be sneered at, even when compared with the record of Harvard or Yale:

Event	VASSAR	YALE
100-yd. dash . . .	13 sec. . . .	10 sec.
220-yd. dash . . .	33 sec. . . .	22 sec.
120-yd. hurdle . . .	21 sec. . . .	15 4-5 sec.
High jump . . .	4 ft. 8 in. . .	5 ft. 10 in.
Broad jump . . .	15 ft. . . .	23 ft.

#### THE RELATION OF PHYSICAL DEVELOPMENT TO INTELLECTUAL ABILITY.

MR. G. W. WEST publishes<sup>1</sup> some interesting observations on the relation of physical development to intellectual ability, as shown by studies of the school children in the Toronto schools. The attempt was made to have the teachers group the children as to their mental ability into three as nearly as possible equal divisions of "good," "average" and "poor," basing their estimate not on mere class standing but upon observed natural quickness of intellect and assimilation of ideas. This was most interestingly found to be impossible as there at once appeared a disinclination to classify any pupils as dull. The other two classes were about evenly distributed. A similar experience was had in Worcester, where the teachers looked upon poor students as an implied reflection on themselves, and so had none.

The stature and weight of the children being recorded, groups were made for both boys and girls, with the result of showing that "the general rule is that the 'poor' children are more fully developed than the 'good' children." There were a few cases, generally near the latter end of the series, in which this order is reversed. In the case of girls' stature this is so at fourteen years, of boys' weight at thirteen, while for girls' weight it is at ten years. In boys' weight the "good" are the heavier from five to seven. The most striking difference, between the two groups is in stature. The "poor" are the better developed throughout, except as before noticed. There is generally about half an inch difference in the averages in favor of the "poor" scholars. In the case of weight the difference is not so marked.

The reason given for these differences is that "the children of 'good' ability were probably so designated from their class standing, and their class standing was undoubtedly in many cases due to a greater amount of 'pushing' on the part of their parents. This would naturally mean a diminution in the amount of exercise, resulting in decreased rate of growth, while, on the other hand, their more sedentary life would result in a greater relative girth and consequent weight. The weight depending on the stature as well

as on the girth, we have the reason for the less marked difference in weight between these two classes than between the same classes in respect to stature. The difference in stature is fairly constant; the difference in weight fluctuates considerably. We see here, from both points of view, the relative effects of insufficient and of proper exercise."

On the whole, from these observations, the author considers it safe to say that precocity bears an inverse ratio to bodily development.

#### NURSES AND MEDICAL MORALITY.

THE value of skilled nursing in the management of a severe and dangerous illness will be denied by no physician. The usefulness of the trained nurse has a secure recognition in the medical world and the intelligent co-operation of a good nurse in the care of a patient is one of the pleasant and satisfactory things in the daily work of a modern physician. But granting all this, even in its highest degree, the physician is not yet ready to assent to a statement that medicine is all nursing, and that all advance and gain in therapeutic art is due to the trained nurse.

Everything is a specialty nowadays, and has its particular official publication. *The Trained Nurse* is a periodical of no little interest and value to graduate nurses, in supplying a means of interchange of ideas and experience among the women engaged in nursing. In a recent issue there appears a most wonderful production from the pen and refined mind of Mrs. Quintard, discussing the limitations of the nurse's duties in caring for male patients. It relates to pupil nurses in hospital wards and training schools. It displays a marvellous aptitude for mountainizing mole-hills, and gives a truly edifying picture of the rescue of our hospital wards from debauching man. After dealing with the ordinary ward duties of the nurse and disposing of the ward orderly or male nurse in a most ungenerous and summary fashion as being ignorant, careless, dirty or "possessed of a besetting weakness whose effects are only too visible after pay-day,"—a most charming and delightfully vague innuendo,—she comes to the issue of the morality of women nurses doing any dressing within reaching or visible distance of the male pelvis. She says:

"In a surgical ward a nurse may be called upon to do dressings, such as abdominal wounds, suprapubic lithotomy, inguinal hernia and hip-joint diseases that are of an unpleasant nature; but with care exposure can be avoided, and the knowledge that a good, pure-minded woman is willing to so care for him, has its moral effect upon the man."

Morality is certainly in need of careful guarding when there is the necessity for such reasoning to excuse a nurse's work. But the pure richness increases as the address goes on:

"Think of what the operating-room was before woman entered it to purify its moral atmosphere. Have our nurses been contaminated by this service? On the contrary, the surgeons of to-day have cause to bless us for what we have done for them, and for the young men whom they are training to take their places in the future. They ask that we take charge of all operations. Let us demand that they take care there shall be no unnecessary exposure, whether the patient be man or woman; and it is the duty of every woman in charge of a school to be often present

<sup>1</sup> Science, August 7, 1896.

in the operating-room, and when there is undue exposure to speak of it; and this can be done in a manner to call forth thanks and not criticism."

It is impossible for us to relate the base and vile contamination of pre-training-school operating-rooms. What the frightful condition must have been can only be imagined. It was so dreadful that until recent years, and "pure, noble woman" came to the rescue, patients often came away from the operating-room with the seeds of gangrene already at work upon their system. Before the day of ether the room was full of groans and shrieks of suffering, but the patients were able to be witnesses of what was done. After anaesthesia there was silence and unmentionable corruption. That is, we may infer so!

The directress of nurses propounds one other question of vital social importance: "Is it wise to allow our nurses to give a full massage or rubbing to male patients?" This is well known to be a common practice in all hospitals and one regularly recommended for all patients. It is to be hereafter under the most careful restriction according to the latest judgment as to "where to draw the line." Here is the rule which decides between decency and danger:

"In some cases it seems necessary, where the patient is just recovering from the effects of a severe illness; but when convalescence is *once* established, such treatment should only be given by a male attendant."

The italics are her own. She concludes this paragraph as follows:

"In caring for the very sick we must, as far as possible, forget both sex and self. In their weakness men appeal to us as little children, and the motherliness inherent in every true woman's nature responds to their cry for help, and we give them what they need without any regard to our relation, except as patient and nurse."

In the name of purity, what other relation is there but prudery or prurience?

### THE PROGNOSIS OF DISEASE.

THE annual Address in Medicine before the British Medical Association was given this year by Sir Dyce Duckworth, M.D., LL.D., who chose for his subject "The Prognosis of Disease."<sup>1</sup> He ventured to claim that at the present time the attention of physicians is not sufficiently directed to careful observation of prognosis in disease. This is largely owing to the rapid advance in scientific knowledge and the increased attention given to the minutiae of diagnosis and clinical progress. "Few amongst us," he says, "have had the time for a meditative survey of them in order to apprehend the great general laws which underlie and govern them. Our views are apt to be narrow and distorted; we argue too much from the particular; we fail to see things in due proportion, and so less seldom than we might, have a right judgment in things medical."

This difficulty is even more increased in the case of the modern student of medicine, and the speaker expressed a fear that in the pressure of details the student is insufficiently trained to think for himself in a broad and progressive way. Such a future of medicine would certainly be an unfortunate one, both for the art itself and for the public.

<sup>1</sup> British Medical Journal, August, 1896.

He well said, that "we must, if we are to be great in medicine, sometimes lift our eyes from the microscope, and away from the engrossing researches of the laboratories; and rising to a higher platform survey the larger fields and vistas which lie before and beyond us. If we do so we shall certainly come to know more of the inwardness and due proportions of matters which relate to the life of man as he passes through his present environment."

It is a curious fact that no work purely relating to prognosis has been published during this century, although several works have had sections or observations upon it. In older times much more attention was given to the gross and obvious signs of progress or foreshadowing changes. This, of course, was natural, as there were few means of studying minutely the clinical and diagnostic features of a medical case.

It was urged upon all the hearers to read and study the older works in this branch of medicine, particularly the books of Hippocrates.

There can be no doubt that there is lacking to-day in the training of our medical students much valuable teaching in the various aspects of disease—the facies, the decubitus, the tongue, the body odors—which might well be saved from being lost or neglected in favor of the oil immersion lens or the chemical analysis.

Dr. Duckworth, in his plea for better study of prognosis, abates nothing of the value and need of a thorough scientific diagnosis. He said: "It is certain that we can only make advances in prognostic skill by careful and patient study of the whole subject of semeiology. Everything depends upon an accurate appreciation of the symptoms and physical signs presented in any case. If we err at the outset our treatment and our prognosis will also err. There is assuredly no lack of teaching in these days directed to the subject of semeiology in the several parts; but I think it must be conceded that our eyes and our minds are rather apt to dwell too much on our detailed notes and manifold instrumental aids and too little on the patient, his personal peculiarities and the intimate nature of his ailments. We thus miss the due recognition of noteworthy features proper to the whole case—features often eloquent and provocative of further inquiry when appreciated by the trained eye and the open mind accustomed to view the whole and not merely a part, and thus to see every point in due proportion and in proper relation to the rest."

After taking up at length the question of prognosis in various diseases of the different anatomical and physiological systems, giving a most excellent and useful summary of the subject, he closed by saying, that "the younger men may often afford light in the matter of modern diagnostic methods to their seniors, but the experience and knowledge of the latter are needed not seldom in forecasting the issue of a case, and by quoting the words of Hippocrates, "It appears to me a most excellent thing for the physician to cultivate prognosis, for by foreseeing and foretelling in the presence of the sick, the present, the past and the future, and explaining the omissions which patients may have been guilty of, he will be the more readily believed to be acquainted with the circumstances of the sick, so that men will have confidence to entrust themselves to such a physician; and he will manage the case best who has foreseen what is to happen from the present state of matters."

## METEOROLOGICAL RECORD

For the week ending August 15th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r.		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S...9	29.90	82	92	72	68	79	74	S.W.	S.	9	6	F.	C.	
M...10	29.92	86	95	76	70	70	70	W.	N.E.	4	6	O.	C.	
T...11	29.86	82	89	76	62	64	63	N.	S.W.	7	4	O.	C.	
W...12	29.98	82	89	75	68	71	70	N.W.	S.	8	5	C.	C.	
T...13	30.04	76	81	70	74	79	76	N.W.	E.	4	3	F.	C.	.20
F...14	30.07	71	75	67	83	94	91	E.	E.	6	8	O.	O.	.01
S...15	30.16	67	70	64	86	92	89	N.	S.E.	5	7	O.	C.	

\* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threat-  
ening; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 15, 1896.

Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York . . .	1,892,332	1810	532	16.57	6.16	10.67	.82	1.70	
Chicago . . .	1,678,967	697	331	34.06	5.46	27.30	2.24	1.54	
Philadelphia . .	1,164,000	838	315	19.20	6.00	15.36	1.20	1.20	
Brooklyn . . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . . .	560,000	—	—	—	—	—	—	—	
Boston . . .	491,205	357	142	26.87	8.68	19.60	1.12	1.40	
Baltimore . . .	496,315	344	145	26.97	4.93	23.78	2.32	.29	
Cincinnati . . .	336,000	112	32	15.13	17.80	8.01	4.45	1.78	
Cleveland . . .	314,537	115	54	21.50	6.88	17.20	3.44	.88	
Washington . .	275,500	179	64	14.30	12.10	11.55	2.20	—	
Pittsburg . . .	238,617	93	45	40.32	5.40	37.80	2.16	1.08	
Milwaukee . . .	265,000	—	—	—	—	—	—	—	
Nashville . . .	87,754	42	19	21.42	30.94	7.14	9.52	—	
Charleston . . .	65,165	—	—	—	—	—	—	—	
Portland . . .	40,000	—	—	—	—	—	—	—	
Worcester . . .	98,687	50	18	30.00	6.00	22.00	2.00	4.00	
Fall River . . .	88,040	78	45	39.44	1.28	23.04	6.10	—	
Lowell . . .	84,359	65	33	41.58	3.08	41.58	—	—	
Cambridge . . .	81,519	60	31	38.32	8.33	33.33	—	—	
Lynn . . .	62,335	30	16	40.00	6.66	36.66	—	—	
New Bedford . .	55,254	49	27	50.00	10.00	40.00	7.50	2.50	
Springfield . .	51,534	24	8	24.96	16.64	20.80	4.16	—	
Lawrence . . .	52,153	40	27	32.50	—	30.00	2.50	—	
Holyoke . . .	40,149	—	—	—	—	—	—	—	
Salem . . .	34,437	22	9	41.50	12.45	41.50	—	—	
Brockton . . .	33,167	27	14	70.30	7.10	66.60	—	—	
Haverhill . . .	30,185	18	8	5.55	5.55	5.55	—	—	
Malden . . .	29,706	14	6	36.70	7.14	28.56	—	—	
Chelsea . . .	31,295	12	4	8.33	8.33	8.33	—	—	
Fitchburg . . .	26,394	17	14	58.80	—	58.80	—	—	
Newton . . .	27,022	20	9	30.00	5.00	30.00	—	—	
Gloucester . . .	27,663	—	—	—	—	—	—	—	
Taunton . . .	27,093	19	8	36.82	5.26	31.56	—	—	
Waltham . . .	20,877	11	8	27.27	9.09	27.27	—	—	
Quincy . . .	20,712	10	8	20.00	10.00	20.00	—	—	
Pittsfield . . .	20,447	8	7	100.0	—	87.50	12.50	—	
Everett . . .	18,578	8	6	37.50	12.50	37.50	—	—	
Northampton . .	16,738	—	—	—	—	—	—	—	
Newburyport . .	14,554	4	1	—	—	—	—	—	
Amesbury . . .	10,920	—	—	—	—	—	—	—	

Deaths reported 3,613: under five years of age 2,061; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,200, diarrheal diseases 981, consumption 338, acute lung diseases 179, typhoid fever 87, diphtheria and croup 68, whooping-cough 32, measles 15, cerebro-spinal meningitis 11, scarlet fever 6.

From whooping-cough Philadelphia 9, New York 8, Chicago 5, Boston 3, Cambridge 2, Baltimore, Cincinnati, Washington, Providence and Nashville 1 each. From measles New York 9, Chicago, Philadelphia and Boston 2 each. From cerebro-spinal meningitis New York 5, Baltimore, Worcester, Cambridge, Brockton, Malden and Taunton 1 each. From scarlet fever New York and Pittsburg 2 each, Philadelphia and Boston 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending August 8th, the death-rate was 21.4. Deaths reported, 4,456; diarrhea 844, measles 117, whooping-cough 86, diphtheria 73, scarlet fever 43, fever 39.

The death-rates ranged from 13.2 in Burnley to 29.5 in Birmingham; Bolton 23.8, Bradford 14.6, Croydon 17.2, Gateshead 24.4, Leeds 20.3, Liverpool 22.8, London 21.1, Manchester 22.6, Nottingham 18.2, Portsmouth 19.6, Sunderland 21.2.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 15, 1896, TO AUGUST 21, 1896.

The leave of absence granted MAJOR HENRY McELDERRY, surgeon, Fort Robinson, Neb., is extended two months.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 22, 1896.

A. M. D. McCORMICK, passed assistant surgeon, detached from the "Bancroft" and ordered to the Naval Academy.

E. M. SHIFF, passed assistant surgeon, detached from the "Monongahela" and ordered to the "Bancroft."

## OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING AUGUST 15, 1896.

HUTTON, W. H. H., surgeon. Granted leave of absence for twenty days from August 25, 1896. August 13, 1896.

SAWTELLE, H. W., surgeon. Granted leave of absence for thirty days from August 25, 1896. August 13, 1896.

BANKS, C. E., surgeon. To assume temporary command of the Service at Vineyard Haven, Mass., for thirty days. August 13, 1896.

BROOKS, S. D., passed assistant surgeon. To assume temporary command of the Service at Cleveland, O. August 8, 1896.

WOODWARD, R. M., passed assistant surgeon. Granted leave of absence for thirty days from August 13, 1896. August 11, 1896.

GREENE, JOS. B., assistant surgeon. Granted leave of absence for twenty-three days from September 14, 1896. August 13, 1896.

## RECENT DEATH.

DR. NICHOLAS RUDINGER, professor of anatomy in the University of Munich, died August 25th, aged forty-four years.

## BOOKS AND PAMPHLETS RECEIVED.

Arterio-Sclerosis among the Insane. By E. D. Bondurant, M.D. Reprint. 1896.

Fourteenth Annual Announcement of the Medical Department of Niagara University, 1896-97.

The Stigmata of Degeneration. By Frederick Peterson, M.D., Consulting Neurologist to Randall's Island Hospital for Idiots.

A Contribution to the Study of Acute Ascending (Landry's) Paralysis. By Pearce Bailey, A.M., M.D., and James Ewing, A.M., M.D. Reprint. 1896.

Tylosis Palmæ et Plantæ; with Description of Two Cases. Mother and Daughter. By J. W. Ballantyne, M.D., and George Elder, M.B., C.M., Edinburgh. Reprint. 1896.

La Pieghe delle Alpi Apuane Contribuzione agli Studi Sull'origine delle Montagne per Carlo DeStefani, Prof. di Geologia e di Geografia, fisica nel R. Istituto di Studi Superiori di Firenze. Con una carta geologica; due tavole di spaccati ed incisioni nel testo. Firenze. 1895.

Twentieth Century Practice; An International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Volume VIII. Diseases of the Digestive Organs. New York: William Wood & Co. 1896.

Deformities; A Treatise on Orthopedic Surgery intended for Practitioners and Advanced Students. By A. H. Tubby, M.S. Lond., F.R.C.S. Eng., Assistant Surgeon to, and in charge of the Orthopedic Department, Westminster Hospital; Surgeon to the National Orthopedic Hospital; Surgeon to Out-Patients, Evelina Hospital for Sick Children, etc. Illustrated with 15 plates and 302 figures, of which 200 are original, and by notes of 100 cases. London: Macmillan & Co. Limited. 1896.

## Original Articles.

PRINCIPLES OF TREATMENT OF LATERAL CURVATURE.<sup>1</sup>

BY ELLIOTT G. BRACKETT, M.D., BOSTON.

FOR the convenience of description in treatment of lateral curvature, cases can be divided into two classes, representing, not different types, but different stages of one condition, which is distinctly progressive. For our purpose we must consider that, without respect to etiology, the condition is primarily one of a twist of the spinal column, causing a distortion in the symmetry of all parts attached, which depend on it for their support and for their relative position, and therefore any deviation from this normal position and shape of the spine results in a deformity in the trunk, as is seen by change in the contour of the body, in the familiar examples of a high shoulder, prominent hips and scapula, and high hips. As the development of bone takes place in the position in which the part is held, this condition of lateral curvature then becomes a gradually increasing one, both in the increase of the distortion of the position of the spine, as well as in the shape of the bones. The change in the position of spine occurs in two directions, (1) a lateral bending of the spinal column as a whole, and (2) a rotation of the different segments one on the other; and resulting from these two changes in position, are such alterations in the contour of the body as is evident in the shape and position of the shoulders, scapulae, waist and hips, and the relative prominence of the two halves of the trunk. As the deformity progresses, and as growth occurs during its existence, bony change takes place, which offers an additional obstacle to the correction of the deformity, and the treatment therefore varies to a considerable extent, according to the stage to which this condition has progressed. The classes into which these are divided have no distinct boundary lines, but rather serve to designate the degree to which the deformity has developed.

The first class includes cases of such slight degree, in which little or no bony change has occurred, that they present no obstacle to the complete or even over-correction, and are therefore to be regarded as postural curves.

The second class includes those cases in which the deformity has existed so long that definite structural changes have taken place in the bones and ligaments and muscles, and present a distinct obstacle to the complete restoration.

The first class, although postural in character, yet presents definite conditions toward which the treatment must be directed; although but slight structural change exists there is a disturbance of normal function of the spine, as is shown by a limitation in the flexibility and strength in certain directions, so that it becomes easy for the spine to assume a particular mal-position. The treatment must therefore be directed to overcome this asymmetrical development, having for its object, first, to bring about a flexibility of the spine, normal in amount and symmetrical in character, so that the trunk may be held with ease in its normal position; and second, to so improve the muscle strength, and muscle action, that it is held in its normal position without conscious effort on the part of the patient.

The first of these is accomplished by exercises designed to stretch the shortened ligaments, and may be accomplished by vigorous body movements, or by exercise aided by mechanical means. The second, by the use of gymnastic exercises, carried out with the body in a corrected or over-corrected attitude.

In the second class of cases there exists a marked obstacle to correction, in the more pronounced curve in the spinal column, the change in the shape of the vertebral bones and the ribs, and in the limited flexibility. The object of treatment in these cases is twofold: (1) To so increase the range of flexibility in the necessary region of the spine that correction to a greater or less degree is possible; that is, to bring about a condition in which the patient can be made straight or nearly so. (2) To then hold the spine and trunk in nearly as possible this condition, whether by means of apparatus or by increased muscle development, or both, while the bones are being shaped and ossification is taking place.

The principle used to accomplish the first of the measures, that of increasing the flexibility in certain regions of the spine, has long been used by contortionists and dancers, and consists of increasing the mobility of any part of the body by repeatedly forcing to beyond the point of the existing range of motion, thus stretching the ligaments and muscles. The application of this principle to the condition of spinal curvature is attended by the same results, and it has been definitely proved that it is possible to increase the flexibility of the spine in any region and any direction. This may be done by forcible exercise, aided by manual pressure by an assistant, but it is difficult by this method to closely localize and isolate the force.

A more accurate way is by the so-called mechanical correction, by which the desired amount of force can be applied to any part of the spine and in any direction with an accurate graduation, the advantage of the method being in its precision. There have been numerous forms of apparatus used for this purpose, many of which are of considerable value; as examples of these can be seen the modification of Hoffa's apparatus, in which the patient is partially suspended, the shoulders and hips secured by means of clamps and pads, and the desired amount of rotary force applied to the trunk, which has a distinct effect on the rotation of the spinal column. This is used as an exercise of pressure alone, and also combined with breathing by which the effect of respiratory force is added.

A second form is that of the rocker, in which the patient is made to lie on an oblique frame, so arranged that it may be bent above and below at the point where pressure is desired to be made. In this way the force of gravity or superincumbent weight is avoided, and muscular action eliminated, and by this it is possible to increase the backward flexibility of the spine and the rotation in any point desired.

This portion of the treatment must be supplemented, by some method by which the spine is held in the best position it will allow during the process of growth and development. In cases of slight degree, it may be possible for the individual to maintain the corrected position by voluntary effort and improved muscle action. This, however, is hardly to be expected in the cases of greater severity, where it is possible only by continued and considerable effort, and in this some form of support is needful.

<sup>1</sup> Read before the Massachusetts Medical Society June 9, 1896, and recommended for publication by the Society.

MEASUREMENTS IN SPINAL CURVATURE.<sup>1</sup>

BY GEORGE W. FITZ, M.D., CAMBRIDGE.

Cases of lateral curvature present so many complicated and varied conditions, and the changes are so discouragingly slow in many instances, that accurate measurements are of great importance for showing the progress of the disease and the effect of treatment.

For a complete record the spinous processes from the seventh cervical down to the sacrum should be spotted with a black flesh pencil, also the posterior iliac spines. The simplest way to get the record is to photograph the patient thus prepared immediately behind a screen, consisting of a rectangular frame with threads strung vertically and horizontally, cutting the entire surface into inch squares. The photographic outfit is inexpensive and the whole process is extremely easy in a well-lighted room. This gives a photograph of any aspect of the individual, with the means of measuring with comparative exactness any detail that is desired. Taking the straight line joining the seventh cervical vertebra and the mid-point of the sacrum (cervico-sacral line) as a convenient basis, we can measure the length of this line, its inclination to the vertical, the points at which it crosses the line of spinous processes, the levels of points of greatest deviation of the line of spinous processes, the extent of such deviation, and the distances to the sides of the trunk at different levels. By means of the horizontal threads of the screen the height of the shoulders may be determined, the level of the pelvis, etc. Successive photographs can be taken for comparison, and of course must be taken under as nearly the same conditions as possible.

The advantage of the photographic method of recording lies especially in the following particulars: the entire set of conditions is obtained at one instant, so their relations to each other have not become deranged by movement, the patient has not been made self-conscious by overmuch handling and stands in an unprejudiced position.

It is important also to measure the amount of rotation of the spine. This can be done indirectly by measuring the amount of antero-posterior deviation of the ribs on the two sides. The most convenient method for doing this is to take the shape of the back by moulding a strip of lead to it and transferring this to pasteboard by means of a pencil. This pattern cut out forms a gauge which may be applied to the back and corrected until it fits perfectly, when it serves as a permanent index to change in rotation. It is possible to get the entire contour of the chest by having a strip of lead long enough to encircle the chest, cut in two and a small brass hinge inserted. The strip is then moulded around the chest and the hinge permits it to be opened and then re-closed on the sheet of paper for drawing the outline. Measurements should be taken under the same conditions as at first. It is best in many instances to take measurements both standing and lying, or in suspension, for determining the degree of correction possible.

Measurements of strength may be taken, also of weight, height, amount of chest expansion in extreme inspiration and expiration, of flexibility of the spine, forward and backward bending and sidewise bending, right and left. Measurements should be made every

six months, or more frequently in rapidly changing cases. It should be borne in mind that many of the conditions involved in spinal curvature are vague, and that careful measurements which will form the basis for statistical study of the subject are of great value.

NEPHRITIS IN INFANTILE SCURVY.<sup>1</sup>

BY JOHN JENKS THOMAS, A.M., M.D.,

*Physician to the Boston Dispensary; Assistant to the Physicians for Diseases of the Nervous System, Boston City Hospital.*

MOST of the writers upon infantile scurvy speak of the occasional occurrence of hemorrhages into the internal organs, and among them into the kidneys, and of the presence of albumin in the urine at times.

For example, Barlow says that the urine often contains a trace of albumin, and a little blood, that it is sometimes scanty in amount, and coarse concretions of uric acid may be passed. He then calls attention to the statements of Dr. Gee, and Dr. John Thompson that hematuria may be the only sign of this disease in children, and adds that Sir William Roberts has said that he has observed cases of this scorbutic hematuria, without other symptoms, responding to antiscorbutic diet. Barlow then speaks of two similar cases of his own, one responding to antiscorbutic treatment, and another of which he lost sight.

Fruitnight says simply that hematuria has been observed. Carr says that the urine often contains albumin, and at times blood is passed, and then says that it is probable that a greater number of cases would show kidney changes if it were possible to examine the urine during the acute stage. Fox says merely that the urine in this disease is "often very thick," but reports a case, with an examination of the urine, to which we shall return. Fürst says that the kidneys sometimes show extravasations of blood into the pyramids, and says of the hematuria, that it has been observed by Shoppee, Gee, de Bruin, and Conitzer. He states that the hematuria is not always so marked that one can recognize it macroscopically. The urine is apparently clear, and free from blood, but in the sediment red and white blood-corpuscles are found, as well as blood-casts. Von Starck found an excess of urobilin. Fürst also says that Cheadle, Heubner and Conitzer have found albumin present, and de Bruin renal epithelium and granular casts.

Northrup, in Starr's "Text-Book of the Diseases of Children," says only that hematuria may occur.

The autopsies in the disease which we are considering are not very numerous, and only in a part of them is the condition of the kidneys noted. Taylor reports a case with autopsy. He says that there were no hemorrhages into the kidney. There was apparently no microscopical examination of the kidneys made, nor was the result of any examination of the urine given. Barlow reports three autopsies. In the first one, a case of Smith, the abdominal organs were normal, but the urine had not been obtained. In the second case, no disease of the kidneys was noted. In the third, the kidneys were stated to be normal. Fürst also reports a case with autopsy. The examination of the urine is not mentioned. At the autopsy the kidneys were normal. In all, we have five autopsies where the kidneys were found normal, at least

<sup>1</sup> Read before the Massachusetts Medical Society June 9, 1896, and voted for publication by the Society.

<sup>1</sup> Read before the Clinical Section of the Suffolk District Medical Society, March 18, 1896.



macroscopically. In no instance is any mention made of a microscopical examination of these organs, and in no case is the examination of the urine given.

In Barlow's fourth autopsy, in a case of Mackenzie, one kidney showed hemorrhages, almost exclusively affecting the pyramidal structure. Fox gives an autopsy also. In this case the urine had a specific gravity of 1.010, was acid in reaction, and contained albumin. No casts and no blood were found. At the autopsy the kidneys were found to be very large, and pale, with the capsule not adherent.

Certainly these results from autopsies are rather meagre, but this is probably due largely to the fact that the kidneys have not elicited the same interest that the bone lesions have.

In going over the literature upon infantile scurvy for the examination of the urine, I have examined all the articles, which were accessible, in the original publications, and many others in references, and have taken all cases where any examination of the urine was given, although in most instances this was insufficient for our purpose, that is, to enable us to decide whether nephritis were present or not. Yet it is probable that, in many cases where it is stated only that albumin was found, nephritis existed, or had existed.

A number of writers report cases in which the urine was examined, and found normal. Baginsky says that the urine in his cases showed neither albumin nor sugar. In Carr's case the urine was normal. Rehn found neither albumin nor blood in his cases. Barlow, in one of the cases in which he gives a urinary examination, says it was pale, clear, neutral in reaction, and contained no albumin or excess of phosphates. He also says that Bohn and Hirschsprung found the urine normal in their cases, a statement not strictly true in regard to the latter writer. Kuhn in an epidemic of scurvy saw 18 cases in children, most of them nursed; had noted no urinary symptoms in any of them. Jones-Bateman in his case found the urine clear, yellow in color, neutral in reaction, of a specific gravity of 1.016, with an increase of the phosphates, but no albumin or hemoglobin. Whitcomb in his case reports the urine as of good color and quantity, alkaline, and loaded with phosphates, but says nothing about albumin. Von Starck reports a case in which the urine contained no albumin and no blood, while later, a little indican and much urobilin was found.

Turning now to the cases in which the urine was found to be abnormal, we have already spoken of the two cases of Barlow in which he found hematuria, and of the statements of Dr. Gee, Dr. Thompson, and Sir William Roberts that this may be the only symptom of the disease. Dr. Gee's cases are of enough interest in this connection to be quoted in full, even if we feel inclined to doubt the diagnosis, which, however, Barlow accepts. In one, a girl of eleven months, the urine had been bloody for six weeks, sometimes more, sometimes less so. No gravel had been seen at any time. The microscope showed red corpuscles and leucocytes in about equal numbers, but no casts. The quantity of albumin was very small. There were no signs of bladder disease. Nothing could be felt on palpation. The child was rickety, but fat. There were no other hemorrhages. The spleen could not be felt. The gums were natural. On antiscorbutic diet, and three-drop doses of black hellebore

three times a day, the child recovered in less than a week. In Gee's second case, a female ten months of age, the bloody urine had been seen for six weeks, and during that time it had always been bloody, that is to say the hematuria had been constant. The microscope showed a large number of red blood-corpuscles, and a smaller number of leucocytes, but no casts. There were no signs of an affection of the bladder, and no abdominal organ could be felt to be enlarged. There were no other signs of scurvy. The child was rickety, not very pale, and had cut one lower central incisor. In eleven days she was quite well, having been given new milk, mashed potatoes, lemon-juice and cod-liver oil. Barlow in his first article, besides mention of one case of Gee (16 of his table) gives a case of Shoppee (Case 31 of Barlow) where hematuria was found, with excess of uric acid, and scanty urine for a time. The case of Cheadle (Case 17 of Barlow's table) showed definite traces of albumin for a few days. Besides these, one of Barlow's own cases had albumin and excess of phosphates at first. Cheadle's case, quoted by Barlow, has just been mentioned, but Cheadle has reported two cases with albuminuria. One case had albumin which disappeared in five days. The other had "a cloud of albumin" and was well in two weeks. Railton in his third case, mentions that the urine was found to contain a little blood, which disappeared at the end of a week. Albumin is not mentioned. Northrup found the urine bloody in one case (Case 6). Northrup and Crandall report 114 cases, but of this number they could get details in 36 only. The urine is mentioned but twice in this number. Once there was hematuria (Case 6). In the other case there was nephritis (Case 18). The patients died, probably of the kidney lesions the authors say, but no autopsy was obtained. Ashby found blood in the urine of eight of his 25 cases, but never excessive. He says that in the other cases the urine was dark from urobilin, the latter presumably present in consequence of altered blood-coloring matter. Heubner mentions albuminuria in one of his cases. Hirschsprung in 10 cases found albumin present once. Conitzer reports a case in which the urine was small in amount, of a blood-red color, and contained albumin. Microscopically there were found red and white blood-corpuscles, and blood-casts. The albumin and blood gradually disappeared. In his second case the urine was cloudy, contained much uric acid, a slight amount of albumin, and much urates. Möller (Case 4 of Barlow's table) and Shoppee also found an excess of uric acid.

Thus we see that while in quite a number of cases where the urine was examined, it was found to be free from blood and albumin, yet in a great many, perhaps a majority, of these cases the presence of one or both was noted. I am inclined to think that kidney trouble, of greater or less severity, would probably be found in all, or nearly all of the cases of infantile scurvy if a microscopic examination were made, provided it was done during the early stages of the disease. In certain cases of Gee, Thompson, Sir William Roberts, and Barlow the kidney trouble seems to have been the only symptom of the disease.

The case which is added in this paper, showed marked disturbance of the kidneys; and though this was not the only symptom of the disease present, it was the first and the most marked one, and it may prove interesting from this fact.



The patient, E. L., a girl, was the child of American parents in comfortable circumstances. She was the second child, the first having died a few days after birth, because of a patent foramen ovale. There was no suspicion of syphilis or other disease in the parents. At three weeks of age, the child, which was a bottle-fed baby, was overfed by the nurse, and began to suffer from digestive disturbances. It was then put upon the Walker Gordon Laboratory modified milk, and did well after a time. When about three months of age, she had the measles, from which she made a good recovery. After this the child did well for a time, and gained in weight; but when about five months of age, she had some eczema of the body and head. When the child was six months of age, I was called because of an attack of diarrhea. This was on October 11, 1895. After changing the formula of the milk the digestive disturbance lessened, but the child failed to gain, and each time the food was made more nourishing the digestive trouble returned. Finally, malted milk was given in alternate feedings with the modified milk, and this the baby digested, and immediately began to gain in weight. About the 10th of November the baby was put upon malted milk alone, but with half an ounce of cows' milk or cream in each feeding. The eczema had been treated with an ointment containing zinc oxide and starch.

By the middle of November the child had gained two pounds in weight, and the eczema had nearly disappeared. She continued to gain until she was eight and a half months old. At that time, on December 14th, the mother noticed that the child did not take its food well, was feverish, had a slight discharge of mucus from the nose, and that the napkins were stained a dark color by the urine, which was passed much less frequently than usual. On physical examination that day, nothing further was found. The child was well nourished but slightly pallid. The throat was clean. There was no eruption. Nothing was found upon examination of the chest and abdomen. The spleen was not enlarged. There was no tenderness of the limbs nor enlargement of the epiphyses. There was no rosary, and no sweating of the head. There were no ecchymoses anywhere. There was no diarrhea, no passage of blood from the bowels, and no vomiting. The pulse was 140, and the rectal temperature 101.1° F. The child was given ten drops of the sweet spirits of nitre every two hours. The next day the patient was more comfortable. The temperature was 99.6°. There were no new symptoms. On the 16th the temperature was 98.4°, and the sweet spirits of nitre was discontinued.

On the 18th a specimen of urine was obtained for the first time. The color was distinctly red, the reaction acid, and the specific gravity 1.012. There was a trace of albumin, and much blood. The microscopical examination showed many normal and abnormal (shadow) red blood-cells, numerous leucocytes, a few renal cells, and very rarely a hyaline cast. The next day the nurse noticed that the gums about the four central incisors, the only teeth the child had, were swollen and red. She had vomited a little once. The amount of urine was less than normal, but it could not be measured. On the 20th the food was changed to a mixture of milk, cream, and water, unsterilized. The child was also given beef-juice and orange-juice, and water to drink. The water she took greedily, and also the beef-juice, but it was with

difficulty that she could be made to take the orange-juice. She had passed more urine than previously. That day another specimen of the urine was obtained, and taken to Dr. Ogden of the Harvard Medical School, for examination. His report was as follows:

"Amount of urine in twenty-four hours not known. Color slightly smoky. Specific gravity 1.013. Reaction very acid. Amount of sediment moderate, brown in color. Chlorides slightly diminished. Indoxyl increased. Relative amount of urea 1.26 per cent. Albumin, a very slight trace. Sugar absent. Bile pigments absent. Total urea in twenty-four hours not known. Sediment: considerable amount of normal, and abnormal blood; numerous leucocytes and small round cells, an occasional one of which was slightly fatty; a few small hyaline and granular casts, and an occasional small epithelial and blood cast, mostly with little blood and very little fat, and an occasional leucocyte adherent; few small squamous and medium round cells (bladder); an occasional clump of small round cells with large nuclei, as from the calices of the kidney, and an occasional small caudate cell, as from the superficial layers of the pelvis of the kidney. Little fibrin."

Dr. Ogden also added:

"From this examination of the urine, we have what is consistent with a *severe, active hyperemia* of the kidney (catarrhal nephritis). There is a little fat present which indicates a *convalescence* from the same. The increasing amount of urine would also be in favor of a convalescence. There is also a slight inflammation of the pelvis of the kidneys. I find nothing in the urine to account for this renal disturbance, that is, no crystalline elements or evidence of other mechanical irritants found. If nothing happens to prevent, I should expect a complete recovery after a few weeks, provided, however, there is not some irritant which is constantly eliminated."

Another examination on the 25th showed the urine to be acid in reaction, color normal. A very slight trace of albumin was present. The specific gravity was 1.010. The sediment still showed red blood-corpuscles, and leucocytes, a very few casts, and more fatty renal cells. On January 10th there was still the slightest possible trace of albumin present, while the sediment showed a very few red blood-corpuscles, very few fatty renal cells, and no casts. Long before this time the child seemed to be perfectly well; eating and digesting its food well, and gaining steadily in weight. On January 20th, five weeks after the beginning of the illness, the urine was normal. The swelling of the gums, which had been enough to cause them to bleed when they were touched, had lasted only two or three days after the change in the diet was made.

Here we have a child, healthy except that its stomach and bowels were easily disturbed, which had been fed upon a mixture of cream and milk, and malted milk, and had gained upon this food, developing suddenly, with a moderate elevation of temperature, a catarrhal nephritis, characterized by a large amount of blood, where the only other symptom was the sponginess of the gums. These symptoms yielded almost at once to antiscorbutic diet, though it was some weeks before all traces of the renal affection had subsided. We have here two of Barlow's cardinal points for the diagnosis of infantile scurvy, or Barlow's disease, as it is usually called by the Germans. The subperiosteal hemorrhages were absent, and so, of course, the pseudo-paralyses also. Another feature of the case, and perhaps the most interesting, is that the renal trouble was present for five days before the swelling

of the gums was noticed by a very careful and anxious mother.

I think we are warranted in drawing the following conclusions:

(1) In infantile scurvy the kidneys are probably affected in a large proportion of the cases, at least during the acute stage of the disease.

(2) That in this disease the catarrhal nephritis is probably caused by the effect upon the kidneys of the presence of an irritant in the blood, and that this irritant is probably that which by its effect upon the renal walls produces the hemorrhages.

(3) That cases of infantile scurvy occur in which the renal symptoms are the first, or perhaps the only ones observed.

(4) That in suspected cases of infantile scurvy the condition of the urine may enable the physician to come to a decision, or to make a diagnosis much earlier than would be otherwise possible, thus allowing him to save the patient, in some cases, from the severer symptoms of the disease.

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TREATMENT OF DIABETES MELLITUS.<sup>1</sup>

BY FRANZ PFAFF, M.D., PH.D.

MANY books have been written on the treatment of diabetes mellitus, and to deal with even a part of this subject exhaustively would require many hours.

It is not my intention to go into details, but to give rather a general description of the leading points in the treatment of this disease as carried out in one of the universities of Germany, where the study of diabetes has been made a specialty.

Neither physiology nor pathology give an absolute basis for the rational treatment of diabetes. Physiology has not taught us where sugar is normally burnt in the system, and pathology has seldom revealed the organ, the disturbance of the functions of which by disease causes the loss of the normal sugar-burning power.

The chronic inability of the organism to consume sugar is the characteristic sign of diabetes. What cells are at fault? Is it the cells of the pancreas, or of the liver, or of the brain, or of any other diseased organ? Only in rare cases, as already stated, can a diagnosis be made of the pathological condition of any one organ causing the diabetes. As a rule, in making the diagnosis of diabetes we know only that the normal power of the organism to use up sugar is lost to a certain degree. If this power is strengthened again, the sugar may leave the urine and the symptoms of diabetes disappear.

How can this enfeebled function be strengthened, that is to say, what treatment is indicated? Generally speaking, in most cases of illness, where we can not remove directly the cause of the disease or antagonize the cause and its bad effects, we try to treat the diseased organ by rest and moderate exercise (Hoffmann). The principle is the same whether this organ is a complex mechanism like the heart or the kidneys, or whether it is a single cell. Rest and exercise may be achieved with the aid of drugs or without, the choice of our remedy depending on the actual condition of the diseased organ. Thus heart disease with failing compensation may be treated in one case effectually by simple rest in bed, and in another case the stimulation of the heart with cardiac tonics to increased action may be indicated.

The diseased cells of the diabetic organism are not an exception to this general rule, they, too, are to be treated by rest and exercise. But here unluckily drugs alone do not, as is generally admitted, reach the point. With drugs alone no diabetes has been treated successfully. To accomplish the best results, rest of the diseased cells must first be secured by change of diet, and later the cells must be exercised by increasing the proteids and carbohydrates in the food.

How is this dietetic treatment to be regulated so that rest and exercise of the diabetic cell may be accomplished? It is this point mainly which I wish to discuss.

Can we venture to regulate a diet from the very day when we first see a case of diabetes? That is to say, can we judge of the severity of a given case? So-called severe cases of diabetes with an old history of the characteristic symptoms of the disease may be often easily classified; but there are cases which, their symptoms being comparatively slight, may not at first

LI HUNG CHANG AND ANTISEPSIS. — It is stated that Li Hung Chang never heard the name of Sir Joseph Lister until his recent visit to England. The leaders in science are hardly as renowned as the heroes of war.

<sup>1</sup> Read before the Clinical Section of the Suffolk District Medical Society, March 18, 1896.

cause anxiety to the physician, but which in fact may be very serious, and these cases generally make a regulation of the diet according to the severity of the symptoms impossible. It is therefore better before classifying a case, that is, before giving a prognosis, to treat all cases on one and the same plan. The general dietetic rule in nearly all text-books of internal pathology and therapeutics reads, "Exclusion of all carbohydrates and unrestricted use of proteids." The aim of this dictum is, of course, to make the diabetic organism, if possible, sugar free by withholding all carbohydrates from the food. The proteids are allowed because they are thought to be harmless. This kind of regulation of diet would be correct if proteids were really not themselves transformed to some extent into sugar in our bodies, and if the diabetic organism was indifferent to the quantity of proteids ingested. But direct experiment on diabetics with pure proteid diet has proved that the amount of sugar excreted varies in proportion to the amount of proteids ingested, that is to say, the daily quantity of sugar, if sugar was present under a fixed diet of meat alone, increases, if the amount of proteids given is also increased. In other words, sugar is formed out of proteid substances. This fact was first found clinically and has been subsequently verified by laboratory experiments, which show that carbohydrates may be obtained by cleavage of proteids.

The formation of sugar in a diabetic subject out of proteid material makes the treatment generally followed, namely, the simple qualitative restriction of the diet, only partly correct. In addition to the qualitative, a quantitative restriction is often necessary to free the diabetic organism from sugar.

Observation shows clearly that the sugar-consuming power of the enfeebled cells of a diabetic patient is still further reduced by an excess of sugar over that which the cells, previous to this addition, were just able to consume. By very carefully conducted observations it has been found that a diabetic may be kept sugar free under a given diet and that the organism can even use up a certain quantity of carbohydrates without sugar appearing in the urine. If now the subject is given an increased quantity of food, sugar appears in the urine. If, after a certain time, during which the patient secretes saccharine urine, the first diet—under which the patient remained formerly sugar free—is given once more, the urine may remain saccharine and then cannot be made again sugar free, except, in some cases, by a still further quantitative restriction in diet. This progressive character of diabetes explains the importance which some authors ascribe to keeping the organism sugar free. The first physician who clearly recognized the importance of not only a qualitative, but a quantitative restriction of the diet in the treatment of diabetes, was the Italian clinician, Cantani. He was the first to make both a qualitative restriction of carbohydrates and a quantitative restriction of proteids in the diet of his patients.

Professor Naunyn, my teacher, took up later Cantani's treatment, which in the meantime had fallen to some extent into discredit, and it is especially in Naunyn's clinic during the last twenty years that Cantani's treatment has been mainly worked out. This treatment consists simply in a qualitative and quantitative restriction of the diet. Changes of the diet are made according to the cases and their progress. The aim of the treatment is to strengthen the diseased functions

of the diabetic cells in giving them first rest by withholding all carbohydrates and allowing a limited quantity of proteids, after which, according to the case, the amount of food given is increased and its quality varied.

The general rule consists in commencing the treatment with the so-called "severe diet." The patient is allowed per day 500 grammes of lean meat of any kind with the exception of liver. These 500 grammes of meat are weighed after boiling. To prepare the meat only oil, butter, vinegar or lemons are used. About three litres of liquid food is allowed, consisting of water, meat-broth, soda-water, etc. Some brandy is permitted. This "severe diet" is kept up about fourteen days. According to the result obtained by this treatment and the subsequent changes in diet, which consist in allowing a certain amount of carbohydrates, Naunyn divides the diabetics into three different grades: Severe cases, cases of moderate severity, and slight cases. The ultimate treatment to be followed varies in the different grades.

If in the trial-treatment sugar does not disappear, but still remains present in quantities greater than one per cent., the diabetes is a severe one. If the sugar has disappeared, entirely, the case may be a moderate or a slight one, this point being finally determined by the ability or non-ability of the diseased tissues of the body to use up carbohydrates. For this determination the patient is now allowed a certain quantity of carbohydrates, usually about three ounces of bread. If the patient remains sugar free with this amount of bread, the diabetes is considered to be of the slight variety, if some sugar appears in the urine, the case is one of the medium type.

I need not insist that Naunyn's division of cases into three different classes is only for practical purposes and that transitional cases occur.

Let us now pass to the ultimate treatment. The ultimate treatment consists in careful regulation of the diet so that the strength of the patient may be kept up and his body weight not diminished—in the beginning of the treatment all patients lose more or less flesh, as a rule, a few pounds the first week—and last, but not least, the daily excretion of sugar either prevented altogether or kept as low as possible.

In the severe cases of diabetes the excretion of sugar can hardly ever be prevented, except by withholding food altogether for a day or so, or by diminishing the daily amount of food below the quantity allowed in the "severe diet." To keep up the strength of patients of this type, the further dietetic treatment in these cases should consist, if possible, mainly in increasing the amount of proteids. The amount daily given may be sometimes increased to two or even three pounds of meat with benefit. In other cases severe digestive troubles occur under such excessive meat diet, and it has to be abandoned. On the whole, cases of the severe type do not do well under strict regulation of diet, and often the regulation of the diet has to be given up altogether or has to be of only very limited degree. But the amount of sugar excreted should not, if possible, be allowed to exceed five per cent. and the quantity of urine two to three litres.

In the cases of diabetes of moderate severity, the urine becomes sugar free only under the strict meat diet. Such cases often present themselves with a large amount of urine, five to ten litres, containing four to ten per cent. of sugar. A case of the severest type may at first be suspected. But here under the

severe diet the urine becomes sugar free in one or two weeks. As soon as this occurs the quantity of food has to be increased. Proteids should be mainly used in the beginning of this period. Later, vegetables and bread may be given in small amount and the urine may still remain sugar free. But unluckily, often patients cannot stand a long-continued meat diet. Digestive troubles appear and the diet has to be rearranged and then a small amount of sugar will appear in the urine. Should the urine of cases of the medium type contain sugar after repeated trials with a small amount of carbohydrates, "severe diet" having been followed in the intervals between the trials, the severe diet has also to be abandoned and vegetables, milk, bread, etc., must be allowed in small quantities, which should be regulated according to each special case.

In the so-called slight cases, namely, those which remain sugar free in spite of the addition of some ounces of bread to the 500 grammes of meat, the diet must be so arranged as to keep the urine sugar free. Such a diet can almost always be made fairly agreeable to the patient, if he be of a reasonable disposition.

Variations in the diet, in all cases of diabetes, have to be made subject to the constant control of urinary examination. In changing the diet the quantity of food change must always be given exactly by the physician, as the quantity is, next to the quality, the most important factor. In the choice of carbohydrates due consideration must be given to the fact that the diabetic organism reacts differently to different carbohydrates.

These, gentlemen, are the main outlines of the treatment of diabetes mellitus as carried out in Naunyn's clinic. It is not claimed for this treatment that it is always successful. Absolute cures even under this treatment are rare; but what is claimed is that this treatment is more successful than any other known and that relative cures occur more often on this line of treatment than on any other.

In concluding, I wish to mention that I add, as soon as possible, a large amount of fat to the allowance of meat. I think that cream is the best form in which to give fat. As a rule it is better borne than fat meat, lard or butter. If the patient uses cream diluted with weak tea or coffee he can easily take one pint of cream daily or even more for months without getting tired of it.

Moderate exercise and a daily bath are decidedly beneficial for diabetics. As is well known Kuelz has found that moderate muscular exercise increases the power of the diabetic organism to consume sugar. Too much exercise diminishes this power. The daily bath helps in preventing the irritable itching which so often is present in diabetics.

In hospital practice the treatment just outlined may be carried out without drugs. But in private practice, narcotics are decidedly helpful if the patient is not under constant control. The only drugs of which I have personal experience in diabetes are morphia and codeia. The latter is to be preferred and may be given in increasing doses. They should be employed even if they do no more than alleviate the nervous excitement so often present and to make the "severe diet" more tolerable for the patient during the first days.

Finally, I would advise in private practice keeping the patient during the first two weeks under strict observation, as some cases occur in which the severe

meat diet is decidedly badly borne and has to be given up. Caution is therefore indicated if disagreeable surprises would be avoided.

## BATHS, BATHING AND SWIMMING FOR SOLDIERS.<sup>1</sup>

BY H. LINCOLN CHASE, M.D., BROOKLINE, MASS.,  
*Assistant-Surgeon Massachusetts Volunteer Militia.*

(Concluded from No. 2, p. 216.)

### MODEL MILITARY BATHING ESTABLISHMENT.

HAVING now very imperfectly described the present status of "Baths, Bathing and Swimming for Soldiers," the writer will attempt to carry out the second part of Colonel Bache's suggestion, namely, to furnish a general plan and estimate of cost for suitable bathing establishments for our large military posts. All present here are probably aware that in the near future our regular troops will be concentrated, as now in England, in a comparatively small number of very large posts.

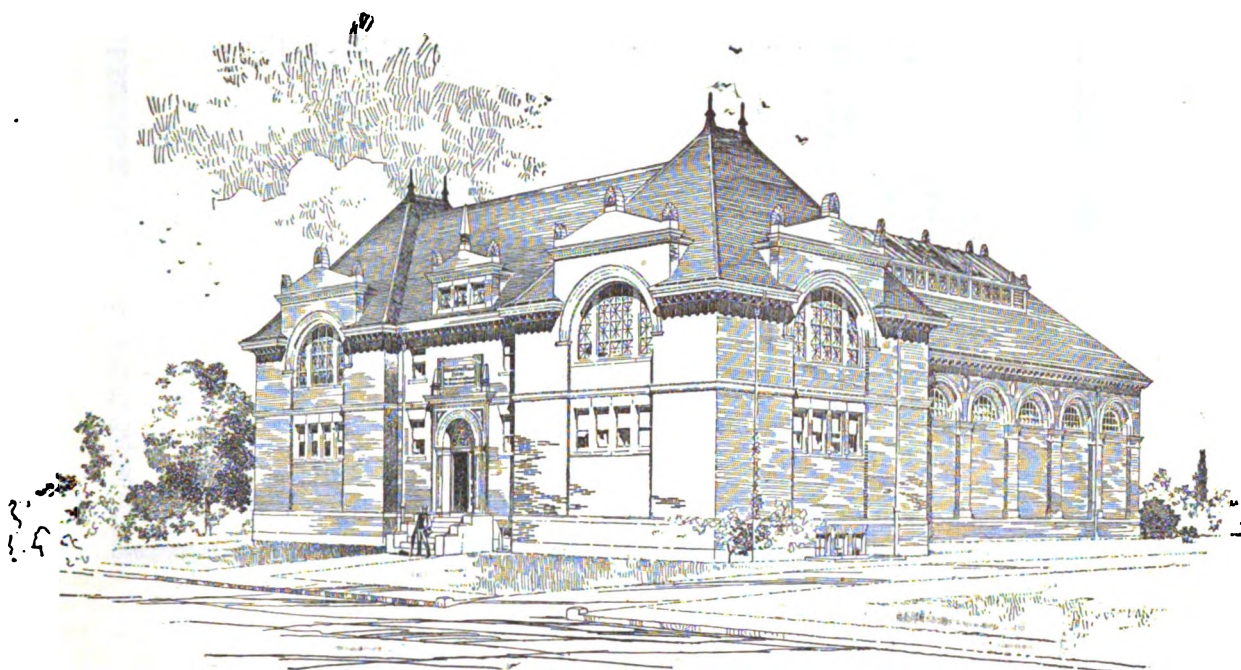
His request was made because the writer happens to have the honor of being selected as Chairman of the Special Committee on Improved Public Bathing Facilities in Brookline, Massachusetts, a progressive residential town of some 17,000 inhabitants, and adjoining Boston, but having no water front. Since the Brookline Public Bath, in the writer's opinion, is a model (with one slight exception as to its arrangement) of what an all-the-year-round military bath should be, a brief description is given. The result of the Committee's labors is a handsome T-shaped brick building, now being constructed, which is to contain a number of rain baths of the German "Gegenstrom" pattern (with space for more in the future); three bathtubs for those who cannot or will not see the advantages of the slant shower bath; a swimming tank, 80 feet by 26 feet, lined with English white-glazed brick; a small tank 22 by 10 feet, same material; some fifty dressing-rooms; a gallery for spectators, also serving for a running track; a small steam laundry for the towels and tights; toilet-rooms, and meeting or lecture rooms. A special feature found in two of the best and most recently completed bathing establishments of Europe (Stuttgart and Hamburg) will be the addition of a passageway in rear of the dressing-rooms that surround the two swimming tanks, as well as in front of them. This addition has the hearty approval of Dr. E. M. Hartwell, Director of Physical Training in the Boston Public Schools, and has obvious advantages, not only in convenience, but in keeping clean the passageway around the swimming tanks and consequently the water, a most important point, while also securing better ventilation for the dressing-rooms and better order among the bathers.

The water constantly changing, is from driven wells, and is heated by steam, the temperature being equalized and sustained by a pulsometer, and the surface of the water being constantly swept by a superficial current of fresh water from one end of the tank.

The shower baths in a military bathing establishment would better be arranged as in plan on p. 238, prepared for the writer by Mr. F. Joseph Untersee, Architect, of Boston and Brookline. Mr. Untersee, who served in the German Army as a one-year volun-

<sup>1</sup> Read at the sixth annual convention of the Association of Military Surgeons of the United States, Philadelphia, May 13, 1896.





THE BROOKLINE PUBLIC BATH.

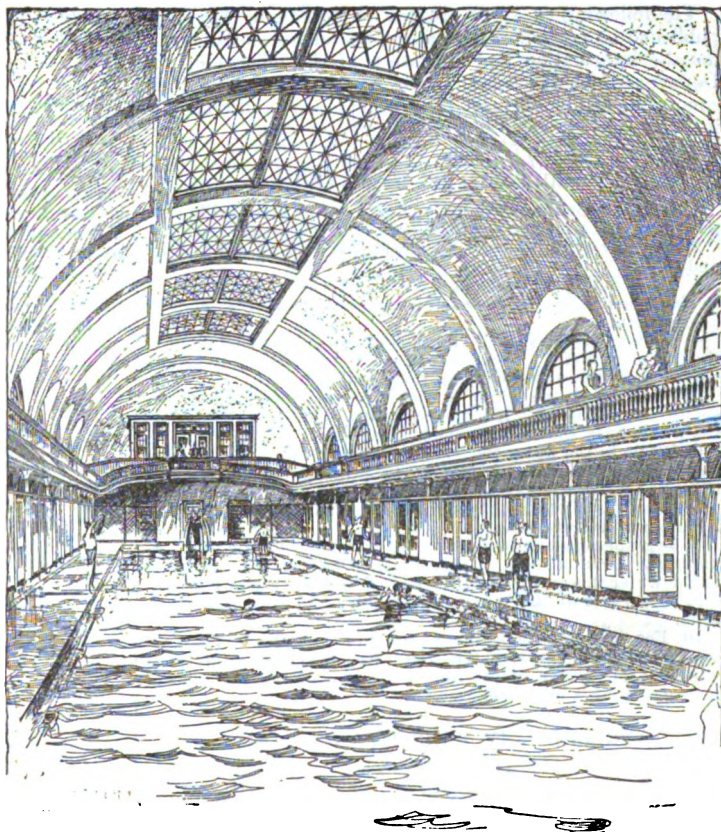
teer, prepared the plans accepted for the Public Bath in Brookline, just described.

The cost of the Brookline Public Bath, exclusive of land, will be \$40,000, and the cost of maintenance is estimated at \$4,500 to \$5,000 per annum. Such bathing establishments as this, but of a somewhat smaller size, the writer would recommend be erected at some few large U. S. military posts of the future that have no water front, and to which recruits are most likely to be sent for their preliminary training. It is also recommended, that at all posts having water fronts, swimming places be secured, as is done in Germany and elsewhere.

As to bathing and swimming in our National Guard, some facilities for bathing are usually provided during encampment, and in most organizations there is some knowledge of swimming, but few men are proficient in it.

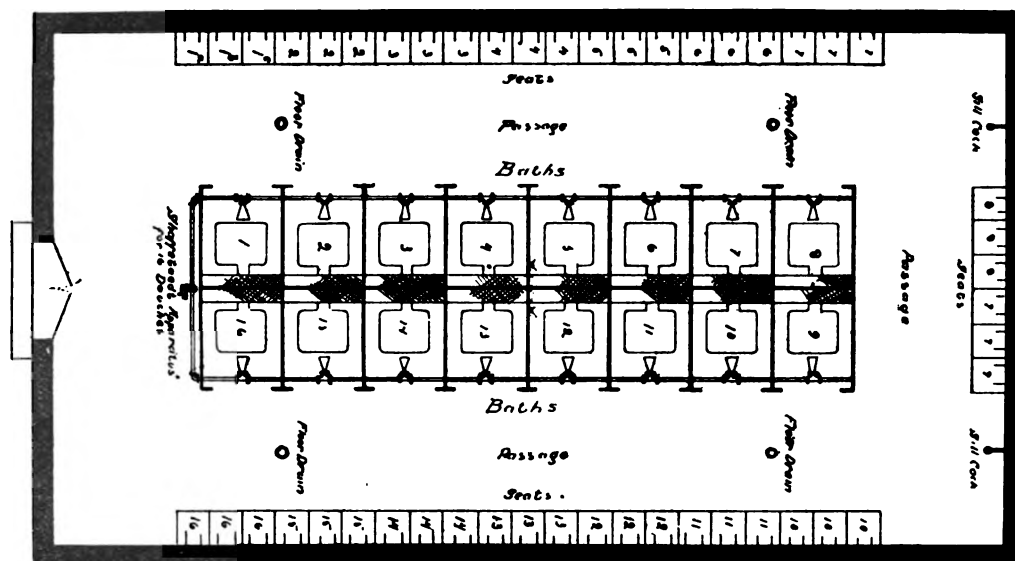
In the regiment to which the writer has the honor to be at present attached, the Fifth Infantry, Colonel William A. Bancroft commanding, about 15 per cent. of officers and men are unable to swim at all.

In closing, it is gratifying to be able to state that the late head of the Medical Department of the Massachusetts Volunteer Militia, Surgeon-General Edward J. Forster, like his distinguished predecessor, Surgeon-General H. L. Burrell, who began the good work, had taken the necessary steps to secure better bathing facilities at the State Camp, including facilities for instruction and practice



THE SWIMMING TANK.

of the troops in swimming. He advocated a large artificial pond, suggested by Adjutant-General Samuel Dalton, for swimming practice, which, with the present



PLAN FOR A MILITARY BATHING ESTABLISHMENT.

facilities, will enable the troops to exemplify the proverb of the great Wesley, that "Cleanliness is next to godliness."

#### APPENDIX.

The following excellent treatise on Swimming has been published by command of Major-General Nelson A. Miles, for the information and assistance of the officers of the Department of the East, U. S. Army, in teaching their commands swimming and kindred subjects, and a copy of it is furnished to each new cadet at West Point.

#### RULES TO BE OBSERVED.

1. Squads attending swimming should not be marched in such a manner that they arrive at the swimming place *overheated*.
2. After arriving at least 15 minutes should be allowed for undressing.
3. The clothing must not be removed hurriedly, but leisurely, so that when fully undressed the temperature of the body be nearly normal.
4. Only as many as can be instructed at one time should leave the dressing-rooms. Those who are not immediately to be employed should wear a portion of their clothing.
5. Standing in the water to cool off or entering it gradually should be prohibited. If the temperature of the body be normal the whole body should be submerged at once.
6. While in the water the body should be kept in motion constantly; by this means a good circulation is maintained and chills are avoided.
7. When the first sign of a chill manifests itself the man must leave the water at once.
8. Beginners should be kept in the water not longer than ten minutes. Gradually as he progresses and becomes accustomed to the water this may be lengthened to fifteen or twenty minutes.
9. When out of the water he must dry and dress himself at once.
10. Fear on part of a beginner cannot be overcome by promises of punishment or sarcastic remarks. Appealing to his manliness will generally prove successful. Lack of confidence in himself is overcome in a like manner.

#### PRELIMINARY EXERCISES ON LAND.

##### ARM MOVEMENTS.

The men to be instructed will form in the single rank, with an interval of about 2½ yards.

The instructor commands:

1. Trunk forward, 2. Bend, 3. Arms forward, 4. Raise.

At the command *bend*, the body is bent forward in such a manner that it is at right angles to the legs.

At the command *raise*, the arms are brought horizontally to the front, elbows straight, palms of hands together, fingers closed; the head is well thrown back.

1. Arm movements, 2. One, 3. Two, 4. Three.

At the command *one* the hands are turned palms downward, and the arms, stiffly extended, are moved outward until the hands are in a line with the head; the arms are now bent and drawn toward the body until the hands are closed directly under the chin, the forearms are well pressed down and the upper arms are parallel to the sides of the body.

At *two* extend the arms directly to the front, keeping the hands together.

At *three* pause. To recover, command *Attention!* The first of these is a slow movement and the second is a short and quick one.

##### LEG MOVEMENTS.

1. Leg movements, 2. Right leg, 3. One, 4. Two, 5. Three.

At *one* the right knee is raised as high as possible.

At *two* it is extended sideward.

At *three* it is brought against the left. Repeat same with left leg.

The instructor will explain the stroke when executed with both arms and legs.

This may also be executed on land. The men standing with hands closed over head, arms straight, will at the command *one*, turn the palms forward and lower the arms sideward until the hands are in a line with the head, while the arms are being bent and the hands are about to be closed under the chin, the knees are well bent. At *two* the knees are extended with a slight hop and the feet are parted, at the same time the arms are extended upward. At *three* the legs are closed with a hop.

#### APPLIANCES.

##### BELTS.

These are about three inches wide. Made of canvas, padded on the inside with hair and bound and faced with some soft material. On the canvas side there are three three quarter inch iron rings securely sewed to the belt; at each end of the belt there is a larger iron ring, 1½ inches in diameter, also securely fastened.

##### ROPES.

Quarter-inch ropes of some soft but strong material should be used. For beginners 15 feet, and for those who are qualifying 30 feet should be used.

##### UPRIGHTS.

About two feet from the edge of the water an upright should be placed. This should be eight feet high and have an arm which projects over the water five feet long. On the end of this arm a pulley, to receive the belt rope, should be fastened.

##### ADJUSTING THE BELT.

The belt is slipped on over the head and held well up under the arms. The instructor draws the first turn of the rope, then the second and finally the third. The knot or last turn must be exactly between the shoulder blades.

#### PRELIMINARY EXERCISES IN THE WATER.

The belt being adjusted the man will prepare to leap into the water; he will draw a deep breath, and at the command *Leap!* he will spring from the platform. The body must be kept



straight and the feet strike water first. The mouth must be kept closed and the air retained as long as possible. After reaching the surface, in which he is assisted by the instructor, he will take the following position.

#### POSITION IN THE WATER.

The body, with the chest down, is fully extended; arms are held horizontally forward, just under the surface of the water, palms together, fingers closed; the legs are straight and closed, feet downward; head thrown back. When the position is correctly taken the instructor commands:

1. Arm movements, 2. *One*, 3. *Two*, 4. *Three*.

Execute the movements as described under Preliminary Exercises on land. While exercising the arms the legs may be lowered.

To execute the leg movements the instructor commands:

1. Leg movements, 2. *One*, 3. *Two*, 4. *Three*.

At *one* the knees are drawn up under the body as far as possible, feet closed and the knees parted a few inches; lower legs horizontal.

At *two* the legs are extended sideward, parting them as much as possible and forcing the water back with the soles of the feet.

At *three* the legs are closed. This should be done without bending them at the knees.

While the leg movements are being taught the instructor will allow the learner to hold a rope between his hands, the other end of which may be fastened to the platform. This will serve to keep the body from turning.

When these movements are faultlessly executed the instructor will command:

1. Stroke, 2. *One*, 3. *Two*, 4. *Three*.

At *one* the arms are moved sideward and when the hands are moving toward the body the knees are drawn up. These movements will be executed in such a manner that the hands are closed when the knees are fully drawn up.

At *two* the arms are extended directly forward and the legs sideward.

At *three* the legs are closed and the hands remain closed in the first position.

The cadence of this stroke is indicated by the command. The first command *one* is drawn out, indicating that the movement is a long and slow one, this is followed quickly by the other two which indicate that these movements are to be executed quickly and in quick succession.

After each stroke there is a slight pause.

When the stroke is executed properly by the numbers it should be tried without the numbers. When this is learned the instructor will hold the man by the rope only. Doing this he will allow the man to move forward with each stroke.

To satisfy himself that the man is learning to support himself, the instructor will slacken the rope slightly just as the stroke is begun, drawing it taut again when the extension is executed. Gradually the weight on the rope will grow less and soon the man will be able to execute a few strokes unassisted. Now he is encouraged to swim as many strokes as possible; the instructor being careful to be ready to draw the rope taut when assistance is required. When he is able to swim from 30 to 50 strokes he is given a trial to swim on time. This is done daily until he is able to swim from five to six minutes when he is transferred from the Beginners' Squad to the Qualifying Squad.

#### BREATHING.

This is always a source of great annoyance to beginners. Instructors must give the necessary information regarding the manner and time of breathing when the stroke is being taught. By doing so much will be gained.

Ordinarily each act of respiration is divided as follows:

Inspiration, followed by a very slight pause; expiration, followed by a pause, the duration of which is equal to about one-fifth of whole time required by one act of respiration. The act of expiration is always a trifle longer than that of inspiration.

In swimming all this is slightly changed. The inspiration is quick and deep, which is followed by a pause; the expiration is slow, occupying again as much time as the inspiration; then there is another slight pause.

The proper time to inhale is while the arms are being drawn towards the body; hold the breath while the arms are being extended, and exhale during the pause between the strokes.

#### QUALIFYING.

No one, who is not able to swim at least ten or fifteen minutes, with the ordinary chest stroke, should venture into deep water. Until this is accomplished no one should, under any circumstances whatever, be allowed to swim in deep water without having a rope fastened to his body.

When a man is attempting to qualify the belt is placed around his waist. Every man is expected to swim as long as he possibly can. To qualify he must swim, at the very least, ten minutes. When circumstances will permit it this time should be increased to twenty or thirty minutes. After qualifying, instructions are no longer received; the man is then transferred to the Practice Squad.

Usually at his first or second attempt to qualify a beginner

will fail to do so. He will lose confidence and with it the stroke. His legs and arms will execute all but the right movements; he forgets to breathe at the proper time and is in consequence choked by the water. In order to overcome this the instructor will first encourage him to regain confidence and the stroke; if this is unsuccessful he must assist him until the stroke is again regained.

#### PRACTICE SQUAD.

A person is by no means considered even an ordinary swimmer if he is capable of swimming on his chest only. He must also accomplish the art of sustaining himself in the water with less muscular exertion than is required by the chest stroke. To learn to do this is the duty of the members of the Practice Squad. To develop endurance, swimming long distances should be encouraged.

It is not necessary to give systematic instructions in the following modes of swimming. Any ordinary chest swimmer can acquire them with a little practice.

#### SWIMMING ON THE BACK.

This should be diligently practiced, as it affords the exhausted swimmer an opportunity to rest himself.

##### I. With Leg Movements.

The body, fully extended, is thrown backward and rests in the water at an angle of about 20 or 25 degrees; the arms are thrown out sideward and bent, fore and upper arms at right angles to each other, palms down; the head is well thrown back; the chest thrown out and the back slightly arched. To propel the body the knees are drawn up as in the chest stroke, but only about half the distance, and then extended sideward and closed. Arms may also be folded or hands placed on hips.

##### II. With Arm Movements.

When the arms only are used the position is the same. The legs may be parted or closed, and the back is well arched. The arms, about half extended, execute a series of paddle movements toward the body.

##### III. Arms and Legs.

The leg movements of the I and the arm movements of the II may be combined. Or the same leg movements may be combined with a backward and overhead reach of the arms. Here the arms are raised out of the water and moved as far backward as possible when they again enter the water and are forced toward the body.

#### TREADING WATER.

The body is nearly at right angles to the surface of the water, there being a very slight inclination backward.

i. Raise both knees alternately and extend directly downward. The forearms are held horizontally forward and the hands are used to press the water downward.

ii. Execute the same movements raising both knees at the same time and extending the legs downward and sideward.

iii. Execute either of the above without the use of the hands.

#### FLOATING.

The body is stiffly extended and rests in the water face upward; the back is well arched, the head well thrown back; the legs closed or parted, the arms are at the sides. The lungs should be kept well inflated and the respiration quick. If it is found impossible to float in this manner the hands should by a wrist movement only, be quickly moved inward and outward, palms down.

#### LEAPING.

Preparatory to leaping into the water the lungs should always be well inflated and care should be taken not to open the mouth, thus allowing the lungs to be emptied, when the body strikes the water. If the lungs are inflated the buoyancy of the body is of necessity greater and no discomfort is experienced, as the pressure of the water against the chest is not so apparent. The feet should always strike the water first. The arms may be held against the sides, overhead, or one overhead and the other against the side.

In order to rise quickly execute the leg movements of the chest stroke.

#### DIVING.

There are three kinds: the deep or perpendicular, the slanting and the shallow.

The first is the most difficult and the last the most dangerous.

##### The Slanting Dive.

Bend the knees and swing the arms forward and leap, turning the body in such a manner that it enters the water at an angle of about 45 degrees. Legs remain straight and closed.

##### Shallow Dive.

Leap as in the slanting dive and just as soon as the head enters the water press the arms well back, throw the head back and bend the body backward as much as possible. Legs remain straight and closed.

*The Deep Dive.*

When executed from a spring-board (and it usually is), the body by the force of the spring of the board and the extension of the knees is thrown upward and slightly forward; the knees are well drawn; when the highest point of the leap is reached, the body is turned over forward, head down, and the knees extended; the arms are thrown out, hands closed. The body enters the water at nearly right angles to the surface of the water.

## RESCUING THOSE IN DANGER OF DROWNING.

Many powerful swimmers have sacrificed their lives in the attempt to save others. This is due usually to the incautious manner in which those in danger have been approached. If "a drowning man grasps at a straw," how much more fiercely will he grasp at something more substantial? Once in his grasp and the chances are about equal that both will be lost.

In going to the rescue of a person, the swimmer must approach him from the rear, grasp him, if possible, directly under the arms and above him forward. It is not necessary to be particular whether the head of the person being rescued is above water or not. In fact it is a decided advantage if the person loses consciousness, as it will be less dangerous and greatly aids the rescuer in his task. Once out of danger consciousness is quickly restored.

To assist a person, a swimmer, who has been taken with cramps or is exhausted, but who has not lost *presence of mind*, the following method will be found the simplest and the least tiresome:

The one exhausted will place his hands on a fellow swimmer's shoulders, sink his body as deep as possible, and in such a manner as to not interfere with the movements of the other. In this way a long distance can be covered with comparatively little exertion on the part of the one giving assistance.

To endeavor to assist a man who has lost all presence of mind, and is frantic with fear and despair, in this manner, would be suicide.

## RESTORATION OF THOSE APPARENTLY DEAD FROM DROWNING.\*

As soon as the body has been recovered, resuscitation should, if the weather is not inclement, be attempted on the spot.

1. Remove all clothing from the patient's chest.
2. Place the patient on the ground, face downward, grasp him under the abdomen and raise him up. This will give the water drawn in an opportunity to escape and free the air tubes.
3. Turn the patient over, and with a handkerchief wrapped around a finger clean the mouth and nostrils.
4. Draw out the tongue and hold it in that position with an elastic band, string or tape, passed around its base and under the chin; or by the fingers of an assistant enveloped in a dry handkerchief or cloth.
5. Use Sylvester's Method of Artificial Respiration. Place the patient on his back with a roll of clothing under his shoulders — this roll to be large enough to elevate his shoulders and throw his head slightly to the rear. Kneel at his head and grasp his arms, one in each hand, just at the elbows; draw them outward, away from the chest, till they nearly meet overhead. This action imitates respiration. The patient's arms are then turned down and for a moment forcibly pressed against the sides of his chest. This action imitates expiration. Continue these movements perseveringly at the rate of about 15 times per minute.
6. While the above movements are being executed the patient should be stripped of his lower clothing. This *must not* under any circumstances whatever interfere with these movements. When stripped the body should be dried and covered with blankets, coats or other articles.

An attempt to excite the natural respiratory powers may be made by holding ammonia to the nostrils and by slapping the chest alternately with cloths wrung out in hot and cold water.

7. When natural respiration has been restored the limbs of the patient should be rubbed upward, toward the trunk, to stimulate the circulation; the body should then be covered with warm clothing to restore the warmth of the body. When possible hot flannels, bricks or bottles should be applied. To stimulate the vital actions small doses of aromatic spirits of ammonia should be given.

**A FULL STOMACH.** — A paragraph is now passing the rounds of the medical press in which it is said that a gastrotomy performed on a woman in a hospital at Odessa, disclosed the following objects in a state of incomplete digestion: a fork, a piece of iron, two teaspoons, a needle, a piece of lace with the crochet needle, two two-and-a-quarter-inch nails, four pieces of glass, eight buttons and a key.

\* In the above the method as laid down in the *Hand-Book for the Hospital Corps*, U. S. A., has been closely followed.

THE SURGICAL TREATMENT OF SPASTIC PARALYSIS.<sup>1</sup>

BY WILLIAM N. BULLARD, M.D., BOSTON.

SPASTIC paralysis is that form of paralysis which is accompanied by an active tendency to tonic muscular spasm, or permanent contraction. In children this affection and its results are to be carefully distinguished from the condition found in anterior poliomyelitis and due to that affection. Spastic paralysis in children, when used to signify a particular disease or group of affections, is due to an intracranial lesion; anterior poliomyelitis is an affection of the spinal cord. Spastic paralysis may involve any or all of the limbs; it is most commonly of the hemiplegic or paraplegic type, but in children in a spastic hemiplegia the opposite lower extremity is almost invariably somewhat affected, though not to the degree of the limb on the affected side.

Spastic paralysis in children was first brought prominently to the notice of the profession by Mr. Little, and hence is has been known as Little's disease, this term being often limited more especially to the paraplegic form.

In the early days of orthopedics a few scattering operations were performed on cases of this affection, but the results experienced were not deemed satisfactory, and the generally accepted opinion of the profession was that on these patients operations were not advisable, because recontraction of the cut muscles was certain to occur and no permanent relief of the deformities could be hoped for.

Matters were in this position when Bradford first at the Boston Children's Hospital and elsewhere attempted relief of these patients by tenotomy.

He published the first account of a small series of cases in the *Boston Medical and Surgical Journal* in 1885. In spite, however, of this and of occasional operations performed by him, by Dr. A. T. Cabot and others, it was not until within the last five years that the exact value of the operation in these cases has been determined, and it has become in Boston the recognized treatment for certain conditions.

Operative procedure is advisable only in the more severe forms of spastic paralysis, where the deformity is considerable and disabling, and where it cannot be relieved by other forms of treatment, such as massage and electricity. The latter forms of treatment should, when practicable, be used thoroughly and patiently, and their inadequacy to produce by themselves the required results fully shown before we adopt operative measures. It is surprising, to those inexperienced in the matter, how much an apparently firmly contracted muscle can often be stretched with care and patience, and how much permanent effect can be produced by massage and electricity when properly applied, and when the applications are repeated regularly for weeks or months. We find, however, cases in which the slow method of procedure is difficult or impossible and also some in which it is unavailing. In these cases we the more readily resort to operation as the operation is comparatively simple and not to be considered dangerous. It is to be remembered, nevertheless, that in order to obtain good results the slow forms of procedure (massage and electricity) must be continued for a considerable time after the operation.

<sup>1</sup> Read before the Massachusetts Medical Society June 9, 1896, and recommended for publication by the Society.

Before performing this operation it is very important that the surgeon should understand exactly what he may hope to accomplish by it.

In a successful operation the deformity should be essentially and permanently removed; the limb several years afterward should, when at rest, be in the position of a normal limb so far as the muscles or tendons operated upon are concerned. On the other hand, the operation neither relieves the tendency to spasm due to the original affection, nor does it in any way relieve the paresis. Indeed, so far as the strength of the limb is concerned, it takes away any support that may have existed due to the contraction or to the deformity thereby caused. The condition of the limb after a successful operation will, therefore, be that of a parietic or weakened limb of essentially normal shape. There will, moreover, exist in this limb a tendency to reflex spasm.

The correction of deformity is of more than esthetic importance. It is the first step to relief or improvement, but it is only a step. Its value as a therapeutic measure consists in that it enables other remedies (massage and electricity) to be applied to better advantage. If the opportunity is not given for the use of these, operative measures are of but partial value.

The character of the operation is simple. It consists usually in dividing, wholly or partially, some portion of the tissue lying between the extreme attachment and origin of the muscle. This may be muscular tissue, tendon or aponeurosis. Personally, I believe, that except as an extraordinary measure, a pure myotomy should never be performed on account of the recontraction of the cicatricial tissues. Tenotomies or teno-myotomies are the only safe methods of division, counting divisions of aponeuroses or of tendons as essentially the same in this respect. After division the limb should be held for some time in a position of slight over-correction of the deformity.

Lengthening the tendon is only another method of accomplishing the same result.

#### SUMMARY.

Operative procedures — tenotomy and teno-myotomy — are of much value in cerebral spastic paralysis when their aim and scope are fully understood. They correct the deformity permanently and they place the limb in a favorable condition for treatment by other means; they are not themselves curative. Muscular tissue alone should not be divided. Where possible the tendons should be cut. Where this is not possible either muscle and tendon, or muscle and aponeurosis.

### Reports of Societies.

#### AMERICAN CLIMATOLOGICAL ASSOCIATION.

THIRTEENTH ANNUAL MEETING, LAKEWOOD, N. J., MAY 12 AND 13, 1896.

(Concluded from No. 9, p. 222.)

DR. E. O. OTIS, of Boston, presented a paper on  
THE SANITARIUM OR CLOSED TREATMENT OF  
PHTHISIS.

He showed that the percentage of cases of recovery is greater in sanitariums than under the most favorable conditions in open resorts; also that the special hos-

pitals are the best means of protecting the non-tuberculous. It was shown that at Görbersdorf which has been visited by 25,000 patients in forty years, the mortality from phthisis among the inhabitants has never passed the ordinary average, but, on the contrary, has diminished. About Falkenstein the mortality from phthisis fell from 18.9 per cent. in seventeen years to 11.9 per cent. In open resorts the proportional mortality has increased.

Dr. Otis showed the great educational value of the sanitarium in reference to the patient himself and the great need in the United States of sanitariums for the poor. A table was presented, showing data of all the sanitariums now existing in Europe, numbering 33; 20 are for pay-patients, and 13 are charitable, with a capacity varying from 250 to 15.

DR. D. H. BERGEY, of the Laboratory of Hygiene, University of Pennsylvania, presented a paper entitled,

#### A RATIONAL BASIS FOR PROPHYLACTIC MEASURES AGAINST PULMONARY TUBERCULOSIS.

Dr. Bergey stated that as yet we possess no rational and effective therapeutic measures for the treatment of the disease. He said: In my own experiments on expired air and the moisture condensed from it, I found that, aside from contaminations with common-air organisms in a few instances, culture media through which the expired air of healthy persons had been conducted for some time, remained sterile; that the moisture condensed from the expired air of healthy persons and of consumptives, when inoculated into nutritive media, was likewise free of bacteria; neither could any bacteria or epithelial cells be found in the condensed moisture by microscopic experimentation — either in stained or unstained preparations.

From the experimental evidence at hand we may safely draw the conclusion that there is no evidence that the expired air of consumptives is not a source of infection in any stage of the disease.

As indicated by the results of the more recent investigations on the nature and composition of the aqueous vapor in expired air, we may conclude that this constituent of the expired air of consumptives is incapable of conveying the disease from the sick to the well. The results of the more recent investigations also indicate that, most probably, this constituent of the expired air, either in health or disease, possesses no deleterious influence on health.

As to tubercular sputum as a source of infection, Dr. Bergey said that the experimental evidence as to the infectious nature of the air of houses containing tubercular sputum in the form of impalpable dust is quite extensive and most positive in character. The presence of the germs of tetanus, malignant edema, besides other septic bacteria, proves a serious obstacle to our efforts to produce tubercular infection in animals by inoculating them with the dust of infected houses. A large proportion of the animals inoculated with the dust die from different forms of septic infection long before the tubercle bacilli have had an opportunity to develop their characteristic lesions. But we have discovered measures by which we can overcome to a great extent this serious obstacle; we have abundant experimental evidence that, under favorable circumstances, the tubercle bacillus retains its vitality and virulence for a long time in the dried and pulverized sputum.

The infectious nature of the dust of rooms occupied

by consumptives has been established very satisfactorily by the results of the experiments upon animals of Celli and Guarnieri, Baumgarten, Cornet, Kirchner and Hance.

Especial attention should be given to those consumptives that are still able to follow some occupation and thus come in more or less intimate contact with large numbers of healthy persons. These should have impressed upon them the necessity of carrying with them at all times some suitable receptacle in which to collect their sputum. All consumptives should be admonished, wherever they may be, never, under any circumstances, to expectorate on the floor or into a handkerchief. They should also be cautioned against the danger of conveying the disease to others in the act of kissing. If they persist in kissing others, or in being kissed by them, it should never be on the lips, only on the forehead or the cheeks. They should also be cautioned against placing anything to their lips that may afterward be placed to the lips of others. The knives, forks, spoons, glasses, etc., used by them should be carefully disinfected with boiling water before they are placed with those used by the other members of the family.

The bedding and clothing of consumptives should be kept apart from those of others and disinfected by boiling. From time to time the rooms occupied by consumptives should be thoroughly cleaned. The walls should be rubbed down with moist bread-crumbs, so as to collect and remove the dust, and afterward washed with disinfectant solutions, or they may be whitewashed. The floor, doors, windows, etc., should be scrubbed with hot water containing lye. The carpets and rugs in these rooms should never be swept when dry, neither should the dust collected on shelves, picture-frames, etc., be removed with a broom or brush. It is of the greatest importance to have all dust removed in a moistened condition, thus preventing it from becoming a source of infection.

As has been pointed out by Cornet and Leyden, it is the duty not only of the physician to practise and teach these prophylactic measures, but it is also the duty of the City and State to put these measures into force and to make the necessary provisions for the care of the indigent consumptives, so that they may no longer be a source of danger to the well.

DR. HENRY H. SCHROEDER, of New York, presented a paper entitled

**A STUDY OF HIGHLY-MINERALIZED THERMAL WATERS IN THE TREATMENT OF DISEASE, BASED ON EXPERIENCE AT THE GLENWOOD HOT SPRINGS, COLORADO.**

It was shown that highly-mineralized waters are stimulating to the sensory cutaneous nerves and thereby favor greater activity of the different vital functions. Such waters cannot be borne at the high temperatures permissible with waters containing a minimum of mineral constituents. The Glenwood waters are contraindicated in cases of organic kidney disease complicated with degenerative changes in the arteries. They are of benefit in cases of gout, rheumatism and hepatic disorders. Psoriasis has been greatly relieved by the use of these baths in a few cases.

DR. SAMUEL A. FISK, of Denver, presented a paper in which he dealt with some interesting features of the

**PRACTICAL TREATMENT OF CONSUMPTIVES IN COLORADO.\***

DR. H. L. ELSNER, of Syracuse, read a paper on **SERIOUS HEART LESIONS WITHOUT WELL-MARKED CONTINUOUS PHYSICAL SIGNS.**

Dr. Elsner detailed the history of a fatal case due to coronary disease and myocardial degeneration. In the case reported anginous symptoms increased on exertion, especially after eating. Any considerable and continuous business worry, or exertion of any kind, was associated with an increase of symptoms and then in turn with an increased area of cardiac dulness or transitory dilatation. There was dyspnea and pain in the left arm which, as the case progressed, appeared independently of taking food. Death occurred in eight months from the onset of the symptoms excepting that for several years there had been a direct association of anginous symptoms with the ingestion of food and the accompanying distention of the stomach. No autopsy was obtainable. In a second case, a man who had been seen by the author and left with a regular pulse without a sign of impending danger, died ten minutes later. The post-mortem revealed a thin ventricle with partial rupture, and further examination gave evidence of advanced ventricular fibroid degeneration. In a third case there was a complete rupture with preceding transitory physical signs in which there were microscopic evidences of degenerated ventricular walls and advanced coronary disease.

Dr. Elsner agreed with Romberg and Krehl in their assumption that automatic and rhythmic action of the heart takes its origin in the muscular fibres and not in the cardiac ganglia and that the starting-point of the primary impulse to contraction is in the walls of the auricles near the opening of the large veins. Stokes's statement was reiterated, that in the muscle we find the key to the pathology of the heart.

DR. C. E. QUIMBY, of New York, in discussion, showed that cardiac degeneration does not occur because of the character of the hypertrophied muscle, but from increase of strain or decrease of muscular nutrition and that many errors of treatment are due to failure to appreciate this relation. He spoke of the unwisdom of giving digitalis to a flagging heart in cases of Bright's disease with edema of the feet, and, on the other hand, seeing glonoin clear up the edema by giving the heart a short rest.

DR. BABCOCK, of Chicago, spoke of the great value of percussion of the heart and not depending on a single method of examination such as auscultation, and described two cases which illustrated the point.

DR. ROLAND G. CURTIN, of Philadelphia, read a paper on

**CONGENITAL NARROWING OF THE MITRAL ORIFICES AS A CAUSE OF DWARFED LIVES AND IRRITABLE HEART,**

and detailed six cases. Most of them applied for treatment on account of symptoms of irritable heart; and the majority of the remainder which included a large number not reported, were recognized by the history of the dwarfed life and then by active movement developing the murmur. It was presystolic, or with the first part of the systole above the mitral area and associated with hypertrophy of the left auricle. The symptoms were those of a heart laboring, emacia-

\* See page 216, No. 9, of the Journal.

tion, a dark, muddy or blued complexion, soft muscles, relaxed skin, and a general want of enthusiasm for anything that requires activity; for activity soon begets weakness, dyspnea, tachycardia and exhaustion, and, when this occurs, a long, long time is required to recuperate the strength. Post-mortems have been few. In three such Dr. Curtin was not able to state the precise size of the mitral orifice owing to a want of exact data as to how large the mitral orifice should be for a given size and weight.

As to treatment, Dr. Curtin advises that all active pursuits and long hours should be interdicted, and a harmony enjoined between the capacity of the patient and the amount of business permitted. Avoid the occurrence of dyspepsia, cold, dampness, anger, mental anxiety or excitement. As to drugs, he had found the best results from the use of belladonna, asafœtida, the bromides and valerianate of zinc.

The reasons for considering the disease due to constriction of the mitral orifice are:

(1) The chronic congestive lung trouble found associated with this condition.

(2) The chronic lung disease almost always found on the left side.

(3) The venous stasis and weak arterial circulation.

(4) The character of the murmur. It is presystolic, mitral, or with the early part of the first sound.

(5) The location over the left border of the heart.

(6) The loudness of the murmur would indicate that it required the force of the blood-current only found in the left side of the heart.

(7) It is a short, sharp, whiffy murmur, which sounds quite near to the chest wall.

(8) It is never transmitted except when the lung is consolidated.

(9) The symptoms generally tally with those of cases having acquired mitral stenosis of a mild character.

(10) The hypertrophy of the left auricle which almost always accompanies mitral obstructive disease.

(11) The accentuation of the pulmonary second sound; for, if we have constriction of the mitral orifice, the stopping of the current of the blood, when hurried, dams the blood backward, causing a sudden shutting down of the pulmonary valve and causing the pulmonary second sound to be accentuated.

Eight reasons were assigned for believing it to be congenital.

DR. CHARLES E. QUIMBY, of New York, said: The subject seems to be of special importance just at this time when we are being consulted so frequently regarding the use of the bicycle. Dr. Curtin has clearly pointed out that when the patient is at rest there may be no physical sign of the trouble. It was the appreciation of this fact that has led me for some time past to make all examinations to determine the safety of bicycle riding, just after the patient has taken some pretty sharp physical exercise, sufficient to develop an excited heart's action. When patients, as often happens, who have already learned to ride, come for such an examination, I insist upon going to their homes and meeting them just as they come in from a long, sharp ride. I am convinced that by following such a plan we shall save many persons from serious and permanent injury. I have now a young man under my care who is a typical representative of the class, and whose college course has been broken up, as I believe, by excessive use of his wheel. In con-

clusion, I would like to put in the form of a general rule what Dr. Curtin has essentially pointed out, that to estimate accurately the capacity of a heart to do work, it is necessary to examine it in hyper-activity as well as under normal conditions.

DR. KNIGHT said that the high situation of the systolic murmur calls to mind that described by Balfour in temporary dilatation. The murmur was situated quite high up, more in the pulmonary area. The systolic part in Dr. Curtin's case may have been due to mitral leakage. It is possible in a case of congenitally small heart that there should be no signs or symptoms until an unusual strain comes. In a case which he had in mind, a young woman of twenty years or over had always been disinclined to active play. During the summer she sat around or spent her time in sailing, but never took any active part in games like tennis or ball. It is true she went into the water, but she usually spent the time in floating about. She was rather fat. In the course of time she married, and ten or twelve days after confinement she was seized with severe pain in the right side, afterwards in the left. She had no chill, but some elevation of temperature, and developed a consolidation of lung first on one side and then the other. Dr. Knight was asked to see her in consultation, and said that it was probably a case of pulmonary infarction. There was phlebitis in both thighs. The heart-sounds were weak, but there were no murmurs. After an attack of pain about four weeks after the first, she lapsed into a septic condition and at the end of another week died.

At the post-mortem made by Dr. Councilman, large plugs in both iliac veins were found, but no pulmonary infarction, but the smallest heart that Dr. Knight ever saw in an adult human being; and hypostatic pneumonia attributed by Dr. Councilman to a congenitally weak heart; the valves were sound and competent.

DR. BABCOCK: Was the aorta unusually small?

DR. KNIGHT: It was not described as abnormally small.

DR. FRANK FREMONT-SMITH, of St. Augustine, presented a paper on

#### PNEUMONIA IN FLORIDA.

The distribution of pneumonia in the States of America or Europe depends little upon latitude or the effects of cold. The Southern States of America suffer equally with the Northern; the islands of the West Indies are frequently stricken; Cuba, St. Thomas and St. Domingo, Brazil, Peru, Chili and Paraguay in their native population have a high death-rate. Pneumonia in the northern sections of Europe is not more severe than in Greece, Turkey and Italy. Venice has a fatal form. Pneumonia of the Desert, in the Soudan, Zanzibar, and in Africa destroys nearly all those attacked. Winter visitors to southern latitudes are less subject to disease than natives.

The conviction that pneumonia is a very rare disease, even among the susceptible colored population, is fortified by St. Augustine's physicians, whom I have consulted.

Dr. A. Anderson reports that he has seen not more than six cases of croupous non-intercurrent pneumonia in twenty-five years of practice.

Dr. J. K. Rainey has seen two cases in colored and none in whites in fifteen years of practice.

Dr. A. S. Dunham in ten years has attended six cases among whites, five in colored patients.

Dr. De Witt Webb reports two in colored and none in whites in fifteen years of practice.

Dr. L. Alexander, County Health Officer, has seen eighty cases in sixteen years of practice.

Dr. William F. Shine reports ten cases in colored and white in thirty years of service.

Dr. Fremont-Smith's own records show seven cases non-intercurrent croupous pneumonia, two intercurrent, and two broncho-pneumonia in thirteen. Three of these were importations — one a colored porter, taken from his train to the Alicia Hospital, dying with double pneumonia, and two white waiter visitors, both having had the initiatory chill on the steamer sailing to Jacksonville. These both recovered at the hospital.

Dr. Frank H. Caldwell, Sanford, Fla., chief surgeon of the Plant System of Railways, writes: "In fifteen years of practice I have only had six cases of pneumonia; no deaths. Two of the six cases were colored. This includes not only my private practice, but the Railroad Hospital, in which 4,000 to 5,000 cases have been entered — nearly all colored.

The Florida State Board of Health has furnished official returns for the whole State for five years, ending December 31, 1895. The population of Florida is 391,422. The total number of deaths from pneumonia for five years was 827, or an annual average of 165.4, one death to each 2,372.5 or 42 per 1,000.

A committee appointed at the business meeting submitted the following report, which was forwarded to Washington:

The American Climatological Association wish hereby to join with other scientific bodies of this country in a remonstrance against the passage of any bill by Congress prohibiting or restricting experiments upon living animals in the District of Columbia. They feel that this matter can be safely left in the hands of the gentlemen in charge of the institutions where such experiments are being made. They feel that the one discovery of the antitoxin of diphtheria, which has already saved lives by the thousand, should silence all opposition to vivisection for a century to come. Equally successful means of combating other diseases may be revealed to us at any moment by such experimentation, and, on the other hand, any restriction of such methods might delay such discovery indefinitely.

FREDERICK J. KNIGHT, }  
EDWARD O. OTIS. } *Committee.*

The Association then adjourned to meet in the Congress of American Physicians and Surgeons, to be held in May, 1897, at Washington, D. C.

#### CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

J. L. AMES, M.D., SECRETARY.

REGULAR Meeting, Wednesday, March 18, 1896,  
DR. G. M. GARLAND in the chair.

DR. J. J. THOMAS read a paper on

#### NEPHRITIS IN INFANTILE SCURVY.<sup>1</sup>

DR. ROTCH: This is a very interesting paper, because it draws attention to the importance of examining the urine. I think in a large number of the reported cases of scorbutus the urine has not been examined carefully. I have seen quite a large number of

cases of scorbutus. A large proportion of the cases I have seen have been in consultation. Had they been in my own practice I suppose I should have had the urine examined, but clinically there never seemed to be any especial necessity for such examination. I do not wish to imply that it ought not to be done. In my 70 or 80 cases the diagnosis was very evident. The urine was never reported as being bloody or discolored in any way. I do not, however, know how careful the urinary analysis was in these cases. In some few nothing was found. In no case was attention drawn to the kidney by any disturbance of the urine. It must be very rare, I think, for other symptoms to be absent in infantile scurvy. Dr. Thomas's case appears to me to be almost the only one I should feel a great deal of confidence in. I think it is very doubtful whether these other cases in which hematuria is mentioned as the only symptom of scorbutus, were cases of scorbutus at all. At the end of the first year, when scorbutus usually develops, renal disturbance is very easily set up, and a very slight irritation will cause functional trouble in the kidney with albuminuria; but where there is an actual nephritis it must last, as a rule, much longer. Dr. Thomas's case was one illustrative of that. It lasted five or six weeks, which would make me have some confidence that it was a case of nephritis in connection with scurvy. Hemorrhages have been found in the muscles and bones and various organs, and we might suppose a nephritis might be set up; but we know that the urinary analysis in cases of young infants is extremely elusive, and a large number of autopsies must be made before we can say that nephritis is present in these cases where albuminuria is found unless we consider that these cases of albuminuria are always cases of nephritis. I think that in a great many of these cases no gross lesions are found at the autopsy, and very little on microscopic examination. I should, therefore, say that many of the reported cases were possibly not cases of scorbutus. The rapid improvement would, I think, point towards the most common form of irritation of the kidney in young babies, namely, irritation by uric acid.

I cannot speak too strongly of the importance of what Dr. Thomas has said. In every one of my 70 or 80 cases the urine ought to have been examined; but the fact was that the diagnosis was made instantaneously, and babies who were apparently dying were comparatively well in a few days or a week, and there did not seem to be any great necessity for making such examination.

DR. MORSE: I feel that we are under great obligations to Dr. Thomas for calling our attention to the renal complications of scurvy which have hitherto been so much neglected. It is unfortunate that there have been no microscopical examinations of the kidneys in this disease, but it is to be hoped that in the future such examinations will be made so that we may know just what the pathological changes are. It would seem from the examinations of the urine which Dr. Thomas has reported, that the condition varied from a simple transudation of blood to an inflammatory process. The origin of this inflammatory process must be, I think, as Dr. Thomas has said, some irritant. What this irritant is, however, must, I think, be still held in abeyance. In all probability this irritant is some toxic substance which may be due directly or indirectly to bacteria, or it may be some toxic



product not of bacterial origin. The latter would seem the more likely, inasmuch as scurvy is probably not of bacterial origin.

DR. THOMAS: In reply to Dr. Rotch, I wish to state that I do not imagine that all cases where albumin has been found, had nephritis. I simply mentioned many of these cases that we might have all cases where an examination of the urine was given. In a large majority of the cases reported, nothing was said of the urine. Nevertheless, there have been a few other cases reported, where there were undoubtedly a nephritis present, notably by de Bruin, and Conitzer. As to the examination of the urine in these cases, of course, in many instances it is of no aid in making a diagnosis, as for example in a well-marked case with swollen gums, subperiosteal hemorrhages, and the pseudo-paralyses. In these cases an examination of the urine has but little more than a scientific interest. It seemed to me, however, that this case showed that the nephritis did occur, probably in a larger proportion of cases than was realized, and that in a certain proportion of these cases it was an early symptom, and might thus be an indication for treatment before the appearance of the paralytic symptoms.

DR. F. PFAFF read a paper on

#### THE TREATMENT OF DIABETES.\*

DR. F. C. SHATTUCK: I am very sorry I was obliged to lose any of Dr. Pfaff's paper. I am sure that some quantitative as well as qualitative restriction is often desirable. Whether it may be necessary or even desirable to carry it out as far as Naunyn does, is perhaps another matter; but I think a very important thing in the treatment of diabetes, as in the treatment of every patient the subject of disease, is individualization. Each patient must be carefully studied with his limitations and possibilities, and it will be found in diabetes that these limitations and possibilities vary very widely in different cases. Acting on this idea of giving rest to the organism, Dr. Austin Flint, of New York, sometimes advises patients to fast for thirty-six hours. His plan is this: Saturday night the patient eats supper of the prescribed kind, goes to bed, and remains in bed till Monday morning, taking only water. Monday morning he takes breakfast. That is, as I said, carrying out the principle of rest in a way which does not incommode the patient very much. One patient whom I saw had derived apparently decided benefit in this way. The urine became much more free from sugar for a considerable period after the fast. I have tried it several times, and found no such benefit as occurred apparently in this particular case.

With reference to codeia. I recall the case of a lady of sixty-five brought to me eight years ago in whom sugar and polyuria had appeared five years before this. Her father died of "diabetes and Bright's." There was no question about some form of diabetes. At the time she came to me she was passing about a pint of urine, and had lost much flesh. She was taking codeia, and had been taking it for a long time. In order to determine the type of case, I told her to leave off the codeia. She went through a very uncomfortable period for two or three weeks. The amount of urine went up to three pints; she gained weight and improved in every way. She is living to-day and

under moderate restrictions. Her urine remains free from sugar.

I have been somewhat surprised, and also gratified, to see the way in which private patients can be managed in diabetes without giving them drugs. The number of cases is not small, I think, in which one can get along without even a placebo. If the matter is explained to them, they will submit to the restriction; and I think we not infrequently see cases, especially those that come on in middle life and in the relatively stout, where after a pretty strict diet for some months the diet can be gradually relaxed, and in the course of some months or a year or more it may be possible to return almost to normal diet.

There is a very great variation in the toleration of different individuals to the dietary restrictions. People crave a variety so much that a number of years ago I went to the cooking-school and interviewed the lady in charge. She gave me a number of recipes for making desserts which would be perfectly safe for diabetics, Spanish cream, etc., using glycerine and saccharine to sweeten. I have quite a list of these, and have found them a great comfort to many patients. I am very glad to endorse what Dr. Pfaff has said in regard to cream. It has an advantage over butter, that it has a wider applicability. Few people can eat butter by itself, but people can eat cream. In cases where strict diet is desirable cream and water can be used with a good deal of safety as a substitute for milk.

DR. PRESCOTT: In the treatment of diabetes I think we must remember that the disease should be divided into three different kinds rather than treated as one disease. First, there are the cases appearing in rather stout people over fifty who have been good livers. They may not be high livers. In these people very little is necessary in the way of treatment except to diminish as much as possible (although not restricting entirely) the carbohydrates. I had a case of that kind a year and a half ago in a man of fifty-two, weighing 215 pounds, who had in his urine about five per cent. of sugar at the time I first saw him. Under a restricted diet the amount soon came down to one per cent. and then to no sugar; and since then he has been going along eating almost as any one else does with very little restriction and has very little sugar in his urine and no symptoms. There is a second class of cases, which Lancereux calls the nervous class. These are cases where the diabetes is due to some nervous affection or to some injury; the class which is due to an injury was studied by Drs. Ogden and Higgins, and reported in a paper last year or year before last; and all the cases but two recovered without treatment. The third division and the one where treatment is of the greatest importance, is what Lancereux calls the pancreatic, although that definition is hardly justifiable according to my idea, because not all the cases of diabetes which will not come in the first two classes, can be classed as pancreatic, but in a great many cases, there is some change in the pancreas by which the secretion is either diminished or changed so that its effect upon the inhibitory centres or the excretory centres is changed from what it is in health.

The dietetic treatment I will not go into because that has been covered fully by Dr. Pfaff and Dr. Shattuck. I agree fully with Dr. Shattuck's individualization, because in some cases it is necessary to

\* See page 234 of the Journal.



treat a patient by taking away all those things which are likely to cause any irritation of the nervous system and to stimulate the muscles. Experiments seem to show that there is more sugar in the arterial blood than in the venous blood, and that part of the sugar is taken up in the capillaries in the external part of the body, the peripheral capillaries. If that is so, anything which tends to increase the metabolic activity in those parts will diminish the amount of sugar which it will be necessary for the kidneys to excrete; therefore baths and massage are good and exercise to just short of causing fatigue. As regards drugs, there seems to be the widest difference of opinion, and I think one reason why this is so is because the cases have not been divided into those where no drugs are necessary and those where they may have some influence. One man, a physician, who had diabetes, received the greatest benefit from the sulphide of calcium. As regards codeia, I have not seen very much benefit from its use. I had a patient in the dispensary who for months had codeia in one-fourth-grain doses, but finally the management said it was too expensive and we had to give up its use. I gave him instead the fluid extract of ergot, beginning with ten drops three times a day and increased to one-half teaspoonful, and he seemed to keep in about the same condition as he did while taking codeia. He lost no flesh, the amount of urine did not increase, and the percentage of sugar remains the same.

In looking over the literature of the subject I found there was one man who had had a large experience, and who was an assistant to a man of even a greater experience — Dr. Grueber, of Nauna, which is a sanitarium in Coblenz, Prussia. There they have alkaline springs, and they give the patients a great deal of the water and allow potatoes and bread. Dr. Grueber has seen 187 cases and the man under whom he worked had seen 3,000 cases. He reports one case which I will read, as it is rather instructive, as showing what can be done even if it goes against our preconceived ideas: "Man, thirty-nine. Father and sister died of diabetes, and brother under treatment for it. For two years lived almost entirely on meat, fish and eggs, but was unable to tolerate so rich a diet, and occasionally took bread and potatoes. When first seen was unable to walk; had a peculiar livid flush in the face, edema of the feet; breath had the odor due to acetone; tongue and lips dry and cracked; constipated; urine five per cent. sugar, large in amount, acetone and diacetic acid present. As he thought diabetic coma was on the point of developing, he advised very little meat and fish, no eggs, but as many potatoes as he liked and one ounce of bread a day. Much water was given and twenty drops of nitrous ether three times a day. In two days the urine contained 6.3 per cent. of sugar, very little acetone and no diacetic acid; thirst less; odor from breath scarcely perceptible. On the fifth day a stricter diet, but allowed potatoes freely. In three weeks sugar 1.1 per cent.; able to walk one-half hour at a time; no abnormal thirst; slept from 10 to 7 o'clock without passing water. This improvement had continued up to the time the case was reported, which was three months." This case was given by Dr. Grueber as a typical one, showing the results of the treatment advocated.

DR. LIEBMANN: I would like to call attention to the cases of glycosuria that are often called diabetes, and there is in my mind a great difference. Such

cases, of course, do well. There are cases called intermittent diabetes, and these are accidental or symptomatic in nature. These cases do well for a time, but recur — may be do not recur, and if so, are regarded as cases of diabetes cured. I am very sceptical about curing a case of true *idiopathic* diabetes. I have never seen such a case cured with or without codeia. I have seen two or three cases reported to me by the patients themselves that have been put upon codeia and have been doing well for years. In one the urine was entirely free from sugar for three or four years. The patient has been drinking beer, eating potatoes, etc.; now he is losing ground. In my opinion it is very unwise to allow such patients to drink beer or eat potatoes. The thirst, the polyuria and polydipsia increase at once. Such patients have to get up at night. I know that such cases have been benefited by the administration of codeia. The polyuria and polydipsia have been diminished, but I do not believe there is a cure. With regard to the very strict animal diet, I believe if we carry this out we shall do wrong. Our patient will deceive us. It is better to allow a moderate amount of bread, and if we do they will get along very well. I myself am a sufferer from this disease. I can get along very well without potatoes and pastry, but I must have bread, and if I do not get bread I become so weak I cannot work. I would rather have three per cent. of sugar in my urine, and for the time-being feel strong, than have only one per cent. or none and feel asthenic. There is no doubt that sugar can be made to disappear in three or four days in moderate cases, while other cases will show sugar with all the starchy food withdrawn by the splitting up of the albumin in the system; and here, of course, we ought to make a distinction and ought to be guided by that very point, whether the sugar can be made to disappear by strict animal diet or not. We know that cases in which the sugar continues in spite of the administration of animal food only do badly, and we lose them after a very few years, whereas the other cases are summed up under neurotic cases or fat individuals. They live for years. One of the most difficult features in the treatment of diabetes is the neuralgic troubles, especially sciatica and a presternal pain which is not very sharp, but very annoying. To cure these neuralgic troubles I found hydropathic treatment and exercise in the open air best. I have obtained some benefit from the salicylate of soda. When I was in Europe ten years ago one of our greatest men there told me that light beer would be harmless. I drank it, and found it did me a great deal of harm. I would raise my voice in protest against that.

DR. GARLAND: I have been very much interested in Dr. Pfaff's paper, and pleased with the enthusiasm which he evinces in this line of treatment, and I have no doubt that in Professor Naunyn's wards Dr. Pfaff has seen a great deal of benefit accomplished by this treatment; but I think when it comes to applying a treatment so rigid and so disagreeable in the private practice of a physician in a community organized like that of Boston we should run up against a great many obstacles. It would not only be a question of individualization, but I have found in my practice that the patient and his needs perplex the attending physician much less, as a rule, than the mental atmosphere of the family and of his friends. It is a very different thing treating a patient separated from his ordi-

nary social environment by isolation in the hospital and treating him at home among a lot of sympathetic friends, and his complaints would be a strong agency against the physician who undertook to carry out too rigorously a treatment which might accomplish a great deal in the hospital. One point has been impressed upon me, and that is that cases of diabetes in young people seem to be much more malignant than in older people. I recall two or three cases of diabetes at about the age of puberty where it seemed that no other term was applicable except malignancy. They faded away and died as though affected by acute tuberculosis or some disease of that sort. The class spoken of by Dr. Prescott of stout people over fifty I have found usually much more amenable to treatment. As I understand Dr. Pfaff, he would confine himself to the dietetic treatment. I have found it necessary to use drugs, and in many cases I have found the drugs of immediate service, and subsequently found myself able to drop them and have the patient remain in a comfortable condition. The point Dr. Pfaff made of the liability of diabetic cases when apparently doing well to develop suddenly severe symptoms impressed me. I recall the case of a young lawyer who had diabetes a number of years, and who at times would limit himself to a strict diet and then eat what he chose. One morning he rose as usual, took his breakfast, and was preparing to come to town. When I saw him at ten o'clock he sat panting, as if he had passed through some very violent exercise, and he could hardly talk to me on account of the shortness of breath. There was nothing in the lungs to account for the dyspnea. He rapidly passed into a comatose condition, and died about five that afternoon.

DR. SHATTUCK: I should like to say one word about this French classification of diabetes. We all recognize that diabetes is a symptom; it is not a disease. It occurs under very varying conditions. We see cerebral cases where there is injury or tumor pressing on the floor of the fourth ventricle. We see indisputable cases of pancreatic diabetes. These cases go bad from start to finish. And there are other cases where the glycosuria appears to be of hepatic origin; but it seems to me that our knowledge is not yet sufficient for any satisfactory pathological classification, at all events with reference to treatment. In the great majority of cases of glycosuria or diabetes it seems to me that the real cause is unknown. How many may be pancreatic we do not know, but the contingent is probably small. The whole pathology of the subject is involved in the greatest obscurity, and it seems to me for practical purposes it is much better to make such a classification as Dr. Pfaff makes than such a one as Lancereaux makes, which is way beyond our present knowledge.

SPANISH HOSPITALS IN CUBA. — Dr. Murata, a Japanese army surgeon, who was sent on a mission to Havana by his government, says, in a Tokio paper, that the Spanish army surgeons are far behind the times in their methods; and he describes the nursing as slovenly and negligent, the wounded soldiers being roughly treated by the surgeons and nurses. The latter appear to be laborers picked up in Havana and the neighboring country districts, very dirty and wholly ignorant of the first principles of care for the wounded. — *Medical Record.*

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THE ETIOLOGY OF ALOPECIA AREATA.

M. SABOURAND, who has lately done so much work in cultivating and differentiating the varieties of trichophyton tonsurans, publishes four articles<sup>1</sup> describing his studies of alopecia areata, from a clinical and experimental standpoint.

At the beginning he asserts his belief in the contagiousness of the affection, while admitting that convincing proof is wanting. The question of the parasite that causes it is unsettled. Various microbes have from time to time been advanced as the possible agents, but none have stood the test of time. In the course of Sabourand's studies 300 patients, taken at random, were examined, treated and followed up, and material for histological examination obtained from a patient who had died of tuberculosis. In each case a careful bacteriological examination was made.

With regard to the question of contagion, he points out the fact that far greater weight should be attached to the positive cases of direct transmission of the disease than to the negative, and that such instances are naturally much oftener met with in Paris where the disease is very common, than in countries where it is seldom seen. Epidemics of alopecia areata in schools or barracks are observed at least ten times a year at the St. Louis Hospital. Often a series of cases will be observed from the same quarter of the city, which may all be traced to a common hairdresser.

In examining the symptomatology of the disease the so-called "peladec" hairs are found to have an especial form; that of a club or more properly an exclamation-point. This shape is that taken by the hair before it falls out, and the zone of these club-shaped hairs varies in size according to the rapidity of extension of the bald area. Whenever a normal hair has taken on this appearance, it is condemned to disappear quickly. These diseased hairs vary from four millimetres to two centimetres in length. The earliest appearances of the disease that can be found are a

<sup>1</sup> Annales de Derm. et de Syph., 1896.

central spot occupied by several empty and dilated follicular mouths, while around it are ranged four long hairs of the clubbed variety. The histological characteristics of these clubbed hairs are that their upper extremity is usually pigmented, while the base is colorless; their diameter decreases progressively from above downward; the medullary canal, which is normal in the upper portion, has disappeared completely in the portion near the root, and the root has acquired a more pointed form. This transformation is that of an adult hair into a lanugo hair, and it is inconceivable that such a phenomenon could be brought about by a microbe within the hair itself. The transformation is brought about by the progressive atrophy of the papilla that has produced it. The histological examination alone separates alopecia areata from all the tineæ, as it demonstrates intra-tegumentary and deep lesions, which are the cause of the falling.

In the bacteriological experiments more than fifteen species of microbes were isolated, cultivated and inoculated without result. These microbes were found upon the bald surfaces, and were distinguished as those found habitually in the hair of people who were not afflicted with alopecia areata. None of these microbes, almost all of which have been described by various writers as the cause of alopecia areata, can be regarded as in any sense specific.

In his second paper Sabourand divides the affection into three clinical stages: the stage of progressing baldness, the stage of completed baldness, and the stage of reproduction of new hairs. His studies begin with the latter stage, and he finds that at this time many of the follicles have completely disappeared, while about those that remain the connective tissue of the corium is thickened into close vertical bands, which contain connective-tissue cells, filled in some instances with fat. At the base of these bands or columns, flattened degenerated cells are found in large numbers, which are easily identified as "mastzellen." Many of the hairs are found to be growing in a normal manner, and about them the sebaceous glands are always large, and sometimes of enormous size, and composed of many lobes. The process of pigmentation is suspended, not only in the papillæ of the new hairs, but also in the basal cells of the epidermis throughout the whole plaque, and up to the time of complete cure. From these data he concludes that the loss of pigment in the new hairs is due to a disturbance in pigmentation which is not limited to the papillæ of the hair, but is generalized over the whole region affected. The existence of the "mastzellen" in the deep layers of the corium, shows the intensity of the morbid process upon parts of the skin other than the hair and glands.

With regard to the intermediate stage of the disease, the stage of completed baldness, Sabourand found that the cutaneous vessels, whether perifollicular or not, were surrounded by a collection of cells, which were distinguished as "mastzellen" and mononuclear leucocytes. From the theory that the "mastzellen" when accumulated at a given point, signify a local dis-

turbance of nutrition, and that no polynuclear leucocytes, which are so common in foci of disease caused by microbes, are present in the lesion, it is argued that there can be no active microbic agent present at this stage, but that all the appearances suggest a deep local intoxication, whose cause has already disappeared.

Sabourand's third paper deals with the first stage of the disease, the only stage that is, in his opinion, microbic. At this stage the follicles at the centre of the lesion, present at their upper third, between the orifice of the sebaceous glands and the mouth of the follicle, a dilatation, which he regards as of great importance, and which he has named "l'utricule peladique." At the stage that is intermediate between the beginning alopecia, and complete baldness, this utricule is found filled with various well-known and unimportant microbes. At the outset, however, when the disease is active, the utricule is found, for a short period only, to be filled with a very small bacillus which Sabourand calls the micro-bacillus of the utricule. It is easily stained and is found in large numbers, often in a pure culture. Whenever a bunch of clubbed hairs is found in a lesion of alopecia areata, one or more utricles will surely be found in the vicinity, and hundreds of preparations made from various cases have always given the same result. Where the alopecia is progressing rapidly the microbe may be found by simply curretting the skin. The utricule and the micro-bacillus contained in it are eliminated very quickly from the plaque of alopecia and have disappeared entirely at the stage of complete baldness. It is, however, around the utricule that the cellular lesions of the disease make their appearance, and here the normal hairs undergo a gradual atrophy and are changed into the clubbed hairs. Sabourand's theory is that the characteristic lesions of alopecia areata are due to the toxic action of the micro-organisms contained in the utricule, and acting at a distance. This theory is supported by certain therapeutic facts: the benefit obtained from epilating the edges of the plaque, the necessity of a general antiseptics of the whole scalp, the inefficacy of antiseptic agents in the cure of the disease, and the usefulness of local revulsive measures in causing the elimination of stagnant toxins by diapedesis.

With regard to the question whether the micro-bacillus of the utricule is really the microbe of alopecia areata, Sabourand takes a conservative position. He considers the utricule to be the initial lesion of every patch of alopecia areata, and it has a very brief existence. About this initial lesion are found the histological signs of intoxication, and the fragile, club-shaped hairs are the mark of activity in the patch. The more active the spread of the disease, the more abundant are these microbes, while when the disease is stationary they have disappeared. On the other hand, he is unable to differentiate the micro-bacillus of the utricule from the acne-bacillus discovered by Unna and Hodara. It has been shown that the latter bacillus is found everywhere where there is an oily seborrhea, so that it is not specific of comedo and acne. Whether

the acne bacillus is identical with Sabourand's utricle bacillus, is a matter to be settled by future experiment. Sabourand's fourth and last paper is occupied chiefly with the form of alopecia areata where the baldness is total. He divides this form into two varieties: (1) Total alopecia areata, with an oily skin. This is the grave variety, which exhibits no tendency to improvement. If recovery occurs, it is only after this stage has been followed by (2) chronic total alopecia areata, with dry skin. Here there is slight scaling, and no signs of sebaceous matter. Histologically it was found that the total alopecias presented the same characteristics as the benign form, and the same cells in smaller number, contained in a tissue that was almost sclerous. The same micro-bacillus was found in these cases as in the benign form and was not transitory, but constant. It occurred in larger numbers in the oily form, was less abundant in the dry form, but was never absent. Sabourand declares that, if it is ever proved that the micro-bacillus of the utricle has a causal action, the chronic total alopecias may be susceptible of explanation, on the supposition that the same infection which when transitory, causes a transitory lesion, when chronic, makes the same lesion permanent.

#### MEDICAL NOTES.

##### BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—For the two weeks ending at noon, September 2, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 124, scarlet fever 20, measles 34, typhoid fever 62.

**TUFTS COLLEGE MEDICAL SCHOOL.**—The Tufts College Medical School has taken the Chauncy Hall School Building in Copley Square for its next session.

##### NEW YORK.

**THE ABOLITION OF REAR TENEMENTS.**—The Board of Health is continuing its crusade against rear tenements, which it regards as a constant menace to public health. On August 24th, eight more of these structures were ordered vacated for condemnation, and among them the highest death-rate in any one house which has yet been found was encountered. This house is on West 17th Street, only a few doors from the great shopping thoroughfare, Sixth Avenue, and a very respectable neighborhood. It is a three-story brick building, about fifty years old, and is occupied by four families which number seventeen persons in all. In this tenement the record shows an annual death-rate of no less than 105.9. The highest death-rate in any of the houses previously condemned was in a rear tenement down in Mott Street, where the rate was 91.55 per thousand. The sanitary authorities are somewhat at a loss to account for the enormous mortality in the house on 17th Street, which is much smaller and less over-crowded than many rear tenements with a very much lower death-rate;

but doubtless one reason for it is to be found in the fact that the rear bedrooms in the place have no exterior windows, so that the ventilation is very defective and the sunlight never reaches them.

**IMPRISONMENT AND DISSIPATION.**—Dr. O. J. Ward, physician to the "Tombs" City Prison, recently made the statement that about 75 per cent. of all the persons sent to the prison suffer from gastric and nervous troubles, the results of dissipation, and that 85 per cent. of these are, or have been, addicted to the opium habit. "After these opium victims," he says, "have been here a short time, with access to their favorite drug cut off, their sufferings become pitiable to a degree; and I have had patients here of this class to whom I had to administer as much as thirty grains of morphia in one day in order to save their lives." Dr. Ward has remarked that the alcoholic patients are principally from the upper section of the city, while the opium victims, as a rule, all come from the down-town crowded tenement-house districts.

**THE DISTRIBUTION OF STERILIZED MILK.**—Statistics obtained at the Health Department show the good effects of the free distribution of sterilized milk in Brooklyn under the auspices of the Board of Health, a charitable work that was made possible through the philanthropy of Mr. Nathan Strauss. The death-rate during the second week of the recent hot weather among children under five years of age was only 34.4 of the total number of deaths; which is quite a remarkable showing when it is considered that the general death-rate was exceptionally high owing to the excessive heat. It is necessary to go back to the beginning of June to find a week when the death-rate among children was as low as that. During the period when the heat was most intense Mr. Strauss sent over to Brooklyn about 1,500 bottles of sterilized milk a day. A large force of men was employed at the New York depots, getting the milk ready for distribution, and it was transported to Brooklyn at the expense of and with the wagons and horses of the donor.

**DEATH OF DR. C. F. KITTREDGE.**—Dr. Charles F. Kittredge, of Fishkill-on-the-Hudson, died suddenly of apoplexy on August 19th at Mount Vernon, N. H., where he had just finished making an address at the reunion of the alumni of the McCollum Institute.

**MORTALITY.**—But for the extremely high mortality of the week ending August 15th the death-rate for the month would be unusually low; but, of course, the exceptional number of deaths resulting from the prolonged term of excessive heat brings the average for the month to a comparatively high figure. During the week ending August 29th there were only 736 deaths reported in New York, 362 of which were in children under five years of age. Of the total number of deaths no less than 106, or about one-seventh, were due to consumption. This is an unusually large mortality from this disease during the summer season, and is, no doubt, to be explained, in part at least, by the sudden change from extremely hot to comparatively

cold weather. During the week only 116 deaths were reported from diarrheal diseases, in patients of all ages, and the mortality from the various zymotic diseases was insignificant. There were 18 deaths from diphtheria, two from scarlet fever, and five from measles.

### Miscellany.

#### A DIPHTHERIA INCIDENT.

DR. WILLIAM P. MUNN, the Health Commissioner of Denver, in the report of the Bureau of Public Health for the year 1895, just issued, gives the following instructive and only too common incident of the manner of the spread of diphtheria. It is not often that a series of cases is so well traced.

On June 24th, I was asked to see a little girl, with Dr. H., and to administer diphtheria antitoxin. It was a pronounced case of diphtheria, membrane on the left tonsil, and diagnosis confirmed by bacteriologic examination. The antitoxin was administered, and the patient recovered. Inquiry into the history of this case revealed an interesting and instructive history of diphtheria in the house. In April the father suffered from a sore throat for several weeks, but attached no importance to it. At the end of that time, as recovery seemed to be delayed, he consulted a physician, who made a diagnosis of ulcerated sore throat. Several weeks later the housekeeper, a woman of about forty years, suffering from tuberculosis, had a membranous sore throat, which her physician likewise designated as an ulcerated sore throat. Then a boy of eight years had a sore throat, but no physician was employed. Then a girl of thirteen complained of slight sore throat, to which no attention was paid at first, but after a week she developed alarming symptoms of heart weakness, when a physician was called and arrived just in time to see her die. Two days later the third child complained, and an examination being made as described, the case was found to be one of pure Klebs-Löffler infection. It is now plainly evident that all of the patients had suffered from diphtheria, which might have been positively diagnosed had the physicians availed themselves at an earlier date of a bacteriologic examination.

(The father suffered for two months from paralysis of the palate and regurgitation of fluids through the nose.)

#### PHARMACEUTICAL PROGRESS IN THE LAST QUARTER CENTURY.

MR. WILLIAM MARTINDALE, in his presidential address before the British Pharmaceutical Conference at its Thirty-third Annual Meeting at Liverpool, reviewed the progress made in pharmaceutical knowledge and art since the last meeting in Liverpool a quarter of a century before. He called attention to the exhibit of that year (1870) because it was the first opportunity that he as well as most of the members had "of seeing and testing the physiological effects of what was then little more than a curiosity, namely, amyl nitrite. . . . We now have quite a cluster of these nitrogen compounds used as arterial dilators— isobutyl nitrite, sodium nitrite, nitro-glycerine, hydroxylamine, and more recently erythrol nitrate."

It will be interesting to many whose therapeutics and materia medica have been all of recent years, to read how many of the drugs he thinks of long standing are really of only a few years' recognition. For instance, chloral hydrate was first exhibited at the

meeting in 1869. "Boric acid was but a chemical rarity previous to 1875: it is now produced in tons for medicinal use as well as for the purpose of preserving milk and foods, though it is now being somewhat superseded by formic aldehyde." Carbolic acid as a surgical antiseptic dates from about 1868, while salicylic acid is of still later use, being rarely used before 1876. "The eucalyptus products were comparatively unknown here till 1880." The use of the active principles and alkaloids has risen almost wholly within the last twenty-five years. The mydriatics atropine, hyoscyamine and scopolamine were not then defined, while homatropine had not been found nor physostigmine come into use. It is especially interesting to read his words on anesthetics. He said, "As a general anesthetic ether has to some extent replaced chloroform, which was almost solely used at that time."

With the advance in chemical methods the cost of production has with most drugs been greatly reduced, though this factor has not in his opinion always the same bearing with regard to the popular use of medicines that it has in commercial economy; for example, quinine is not used in a popular way in England "to anything the extent that it was when its value was five to ten times what it is now. The public and the medical faculty have no reason to complain of the costliness of drugs at the present time; when required in quantity or for hospital use, they are with few exceptions supplied at much lower prices, as well as in a state of greater purity, owing to more extensive manufacture, commercial enterprise and chemical ingenuity than was possible twenty-six years ago."

To this, however, he adds the very fair comment upon the cost to the patient of his medicines and the just reason for the pharmacist's charges: "But the cost of distribution, which is not merely a trade distribution, has to be taken into consideration; here the comparatively small demand for most of the articles used in medicine precludes the distributor or retailer from supplying them to the public at a commensurate reduction in price, as the judgment necessary in the distribution of medicines and the care and skill requisite in their manipulation has necessitated the careful and scientific training of those who deal in them. . . . Hence his remuneration is not for material supplied but for special service rendered, and is therefore in many cases out of proportion to the actual commercial value of his commodities. This applies to the simple sale of drugs, though the argument is much stronger when applied to the compounding of medicines."

### Correspondence.

#### A NEW USE FOR THE X-RAYS.

BOSTON, August 31, 1896.

MR. EDITOR:—About three weeks ago I examined with the Röntgen rays an old fracture near the ankle-joint, in a stout woman of fifty. She had been complaining off and on of the pain in the left ankle. I found a fracture at the lower part of the tibia, with union at an angle forwards. There was slight impairment of the movements of the joint, but the result, on the whole, was good.

After examining with the fluoscope, I took photographs of the ankle, with an exposure of about five minutes. I have just received the following letter, which suggests a new use for the x-rays:

August 25th.

MY DEAR DR. RICHARDSON:—I feel that I should write and tell you the splendid effect the x-rays had on my foot. It is now three weeks since I was at your office, and I have not had one particle of pain since. The swelling and soreness have disappeared also. My family think it is all imagination, but that is impossible, because all that I expected from the rays was what you might discern. . . . Yours gratefully,

The remarkable improvement in the case reminds me of the occasional cures which are by some patients attributed to the use of the clinical thermometer twice daily.

Yours very truly,

M. H. RICHARDSON, M.D.

## A METHOD OF INVITING SLEEP.

FLORENCE, MASS., August 24, 1896.

MR. EDITOR:—The following method of inviting sleep to tired, overworked and overworried brains has proven of infinite advantage in my experience, so far as tried.

On retiring put in use, by contraction, a certain group of muscles; change to another before exhaustion, to another, and thence to another, having a definite routine; and continue until a sense of fatigue has come. The brain meantime is asked to keep a record of the respirations and of the muscular engagements in their order until it, too, says, "Enough!" A few minutes generally suffices.

Will sufferers be willing to use any methods or agents foreign to the *materia medica*? Will the profession venture to suggest any? Sleep immediately on retiring is restorative. The drug does not make it so, continuously used. Wine, tobacco, tea, coffee and late suppers, with social and emotional excitement often delay the hour of sleep.

Will you, or will the reader of this proposed method, say if you have any experience with it or any similar experiments and give results? My own personal needs were at the foundation of this "discourse." Conditions of the heart, digestion and nervous system should not be ignored in any case of insomnia. The sufferers are abundant everywhere now.

Yours truly,

J. B. LEARNED, M.D.

## A VISIT TO THE HOSPITAL OF DETENTION FOR LEPERS AT HONOLULU, HAWAIIAN ISLANDS.

U. S. NAVAL HOSPITAL,  
MARE ISLAND, CAL., August 22, 1896.

MR. EDITOR:—While in Honolulu on the U. S. S. *Baltimore* during the month of December, 1895, it was my pleasure to visit "Kalihi," the hospital of detention for lepers, three miles north of Honolulu. An account of this may be of interest.

The intention of this hospital is to afford shelter for the patients condemned as lepers and awaiting transportation to the island of Molokai, the government leper settlement, and also to serve as a home for the suspects, those in whom the symptoms of the disease are not sufficiently well marked to admit of a positive diagnosis.

There are also 30 little patients here, the children of the lepers at Molokai; 23 are graduated from the institution, that is, having passed six or seven years under observation, and showing no signs of disease, they were allowed to go into the common walks of life. Only one of these has become a leper, and he lived subsequently with an infected family in Honolulu. In about one-third of the cases both the father and mother were lepers.

All inmates are carefully watched, and made to remain in the quarters assigned to patients in the same condition as themselves. The hospital consists of five or six one-story whitewashed houses, arranged around a square filled with palm-trees and beautiful beds of flowers. Sisters of Charity from Syracuse, N. Y., have charge of the hospital.

Every month the suspects brought in by government

spies are examined by a board of five physicians, also appointed by the government. The patients appear in the examining-room, and are inspected by each medical officer in turn, who writes his verdict opposite the number of each case on the list before him. The examination being over, the recorder reads off the numbers, and the members in turn give their opinion, the words *leper*, *non-leper* or *suspect* being used. Three votes out of the five are necessary for a decision. The first are held until a sufficient number are waiting, and then they are transferred to Molokai; the second are allowed to return to their homes; and the third are retained for further observation. An examination of suspects was being held at the time of my visit, to which I was kindly invited by the senior physician. The striking objective symptoms of the cases were as follows:

CASE 1. Female, age twenty-nine. Tissues of the face infiltrated and hardened, tubercles from the size of an apple-seed to that of a cherry-stone imbedded in the scalp and face; erythematous patches on both upper extremities, about the size of a silver dollar; palms of the hands and soles of the feet thickened and fissured.

CASE 2. Female, age eighteen. Right facial paralysis; tissues of right forearm infiltrated; soles of the feet thickened; macules on thighs. Patient pronounced a leper, and her three children retained as suspects.

CASE 3. Female, age twenty-eight. Macular patches (copper colored) on both cheeks; tubercles on forehead; macular patches on back and gluteal region size of palm of hand; eczematous condition of left foot.

CASE 4. Female, age twenty-four. Slight tubercular infiltration of face and nose; slight alopecia.

CASE 5. Boy, age ten. Face infiltrated, and nodules about the size of a cherry-stone present; ankles resemble those seen in cases of elephantiasis; voice husky; and ulcers on first and second toes of right foot.

CASE 6. Male, age twenty-eight. Absorption of phalanges of right foot and of first finger of right hand; cicatrices good.

CASE 7. Male, age twenty. Multiple white macules; infiltrated condition of forehead; small tubercles in right external auditory meatus; nasal breathing; a few pink anesthetic patches on back.

CASE 8. Male, age twenty. Absorption of phalanx of first finger of right hand; hand claw-like, as in *main en griffe*.

CASE 9. Male, age seventeen. Face infiltrated; both auditory meati contain tubercles; bones of right hand partly absorbed, giving a contracted and claw-like appearance.

CASE 10. Male, age twenty-three. Alopecia; nasal voice; mottled discoloration on legs.

CASE 11. Male, age sixty-two. Conjunctivæ injected and thickened; paralysis of lids, acute ulcers the size of a silver dollar on thighs, right shoulder and back.

With the exception of Case 10, a Chinese, all the cases were native Hawaiians. Cases 4 and 10 were detained as suspects, the remainder pronounced lepers.

Facial paralysis, however slight, absorption of joints and later of the bones themselves and a reddish or a whitish macular eruption, are the most common primary lesions, as the disease is seen in Hawaii. The population of the islands is about 88,000 (native Hawaiian). At Molokai there are 1,100 lepers; and it is said that only one in every four are detected. Thus out of a population of 88,000, 4,400 are lepers, almost 12 per cent.

Yours truly,

AMMEN FARENHOLT,

Assistant-Surgeon U. S. Navy.

DEATH is the penalty for breaking through quarantine in France, according to a law passed in 1822 and still in force. A peasant from the Pyrennes who had returned from Buenos Ayres in a yellow-fever ship and had scaled the lazaret walls at Pauillac in order to get home sooner, has just been on trial for his life at Bordeaux. Though his offence was clearly proved, the jury naturally acquitted him. —*Medical News*.



## METEOROLOGICAL RECORD

For the week ending August 22d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.				Relative humidity.		Direction of wind.		Velocity of wind.		We'thr. °		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...16	29.99	74	83	64	87	78	82	S.	S.W.	7	14	O.	O.	.02
M...17	29.92	72	79	76	64	56	60	N.	E.	10	4	C.	C.	.06
T...18	29.96	68	78	68	52	76	64	W.	S.W.	10	8	C.	C.	.08
W...19	30.11	60	67	54	68	60	64	N.W.	N.W.	15	9	C.	C.	.08
Th...20	30.20	62	73	52	60	68	64	N.W.	N.W.	9	11	C.	C.	.08
F...21	30.10	66	76	57	65	66	66	S.W.	S.	4	6	C.	C.	.05
S...22	30.14	68	76	62	87	80	84	S.W.	S.	9	7	O.	C.	.05

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., thund-  
ering; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 22, 1896.

Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	822	366	20.88	10.44	10.08	1.90	1.68	
Chicago	1,678,967	416	203	36.96	10.08	28.56	3.36	3.80	
Philadelphia	1,164,000	382	197	23.92	7.54	19.24	1.82	1.82	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	494,205	215	91	21.62	14.10	14.57	1.41	4.70	
Baltimore	496,315	—	—	—	—	—	—	—	
Cincinnati	336,000	106	34	13.16	10.34	5.64	3.76	2.82	
Cleveland	314,587	97	43	29.87	2.06	20.60	5.15	4.12	
Washington	275,500	105	41	30.72	13.44	21.12	2.58	.96	
Pittsburg	238,617	87	42	48.79	5.96	28.56	3.57	2.38	
Milwaukee	275,000	—	—	—	—	—	—	—	
Nashville	87,764	23	8	8.70	17.40	8.70	—	—	
Charleston	65,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	98,687	24	15	41.60	12.48	33.28	4.16	4.16	
Fall River	88,020	54	38	37.00	1.85	37.00	—	—	
Lowell	84,359	47	27	40.47	4.26	34.08	2.13	—	
Cambridge	81,519	28	10	28.00	14.28	26.00	—	—	
Lynn	82,365	23	10	17.40	4.36	17.40	—	—	
New Bedford	55,264	33	21	42.42	12.12	39.39	—	—	
Springfield	51,534	18	8	16.66	—	16.66	—	—	
Lawrence	52,163	—	—	—	—	—	—	—	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	20	10	15.00	—	15.00	—	—	
Brookton	33,167	12	3	74.97	—	74.97	—	—	
Haverhill	30,185	7	2	14.28	14.28	—	14.28	—	
Malden	29,709	14	10	64.26	7.14	64.26	—	—	
Chelsea	31,295	12	6	16.66	16.66	16.66	—	—	
Fitchburg	26,394	5	1	—	20.00	—	—	—	
Newton	27,622	10	4	50.00	—	50.00	—	—	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	7	4	—	14.28	—	—	—	
Waltham	20,877	7	1	28.56	—	28.56	—	—	
Quincy	20,712	—	—	—	—	—	—	—	
Pittsfield	20,447	8	6	50.00	—	37.50	12.50	—	
Everett	18,578	10	5	20.00	—	20.00	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,564	—	—	—	—	—	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 2,686: under five years of age 1,244; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 722, diarrheal diseases 566, consumption 254, acute lung diseases 126, diphtheria and croup 58, typhoid fever 55, whooping-cough 21, measles 9, cerebro-spinal meningitis 8, erysipelas 2, scarlet fever 2.

From whooping-cough New York 7, Philadelphia 4, Chicago 3, Washington and Lowell 2 each, Boston, Pittsburg and New Bedford 1 each. From measles New York 5, Chicago 2, Boston and Pittsburg 1 each. From cerebro-spinal meningitis New York and Washington 3 each, Salem and North Adams 1 each. From scarlet fever New York and Cincinnati 1 each. From erysipelas Chicago and Boston 1 each.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 22, 1896, TO AUGUST 28, 1896.

A board of medical officers to consist of COLONEL DALLAS BACHE, assistant surgeon-general; LIEUT.-COL. WILLIAM H. FORWOOD, deputy surgeon-general; LIEUT.-COL. DAVID L. HUNTINGTON, deputy surgeon-general; MAJOR WALTER REED, surgeon; CAPTAIN CHARLES M. GANDY, assistant surgeon, is constituted to meet at the Army Medical Museum Building on Wednesday, September 23, 1896, at 10 o'clock A. M. for examination of candidates for admission to the Medical Corps of the Army.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 29, 1896.

DAVID KINDLEBERGER, medical director, placed on the retired list September 2d.

H. LAMOTTE, assistant surgeon, ordered to the Naval Hospital at Norfolk.

G. BIDDLE, surgeon, detached from the "Monongahela" and placed on waiting orders.

J. C. WISE, medical inspector, J. C. BYRNES and C. BIDDLE, surgeons, ordered as a board to convene at Annapolis, September 3d, to examine candidates for admission to the Naval Academy.

## SOCIETY NOTICE.

AMERICAN PUBLIC HEALTH ASSOCIATION. — The twenty-fourth annual meeting of this Association will be held at Buffalo, N. Y., on Tuesday, Wednesday, Thursday and Friday, September 15, 16, 17, 18, 1896.

## BOOKS AND PAMPHLETS RECEIVED.

College of Medicine, Syracuse University, Announcement for 1896-97.

Polyorchism. Tubercle in Trochanteric Fossa. By Dr. D. S. Lamb. Reprint. 1896.

University of Colorado, Colorado School of Medicine, Annual Announcement, 1896-97.

Pubblicazioni del R. Istituto di Studi Superiori Pratici e di Perfezionamento in Firenze.

Some Conclusions Drawn from Experiences in Pelvic Surgery. By A. V. L. Brokaw, M.D. Reprint. 1896.

So-called Epispadias in Woman; with an Illustrative Case. By J. W. Ballantyne, M.D., F.R.C.P. Ed. Reprint. 1896.

The Fifty-Sixth Annual Announcement of the Missouri Medical College, Session 1896-97, and Catalogue of Session 1895-96, St. Louis, Mo.

The Tenth Annual Announcement of the Gross Medical College, Session of 1896-97. Circular of Information and Register of Students, Denver, Col.

Fisiologia del Dignino: Studi Sulla Uomo. Per Luigi Luciani, Prof. ordinaria di Fisiologia. Con due tavole lithografiche e 7 figure intercalate. Firenze. 1896.

The Indications for Ventral Fixation of the Uterus. What is the Best Method of Making and of Closing the Celiotomy Incision? By George M. Edebohls, A.M., M.D. Reprints. 1896.

Nuovo Contributo Alla Cura della Tuberculosis Pulmonare con le inalazioni d'olio Essenziale di Menta del Tenente Colonnello Medico Dott. G. M. Carasso, Direttore dell' Ospedale Militare di Genova.

Implantation of a Glass Ball in the Orbit after Enucleation of an Eye. Operations Performed in the Eye Department of the Medico-Chirurgical Hospital. By L. Webster Fox, M.D., Philadelphia, Pa. Reprints. 1896.

L'Acido Carbonico dell' Aria e del Suolo di Firenze. Indagini sistematiche eseguite nel 1896 dal Dott. Giorgio Roster, Professore di Clinica Biologica e di Igiene nel R. Istituto di Studi Superiori di Firenze. Con XVI, tavole 6 figure nel testo e con XXVII prospetti. Firenze. 1896.

A Treatise on Surgery by American Authors for Students and Practitioners of Surgery and Medicine. Edited by Roswell Park, A.M., M.D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, Buffalo, N. Y.; Member of the Congress of German Surgeons; Fellow of the American Surgical Association; Ex-President of the Medical Society of the State of New York; Surgeon to the Buffalo General Hospital. Volume I. General Surgery. With 366 engravings and 21 full-page plates in colors and monochrome. Philadelphia and New York: Lea Brothers & Co. 1896.



## Original Articles.

TREATMENT OF COLD ABSCESSSES.<sup>1</sup>

BY HOMER GAGE, M.D., WORCESTER.

IN considering thus briefly the treatment of cold abscesses, I have limited myself to those which occur in connection with tubercular disease of the bones and joints, omitting all reference to the glandular and other varieties. What to do with these abscesses has long been the subject of much controversy — on the one side the true orthopedist, with his cautious conservatism, urging that they be left largely to nature, and on the other the general surgeon, with his stern adherence to the old dictum that pus must be removed whenever found, urging the policy of active interference. There has been much discussion but there is a very noticeable absence of any definite statistical information, especially from those who believe in leaving these abscesses to nature; and the controversy seems likely to continue as an expression of individual experience, opinion and prejudice.

One thing has, however, been made plain to us all and should be recognized as settled beyond dispute, namely, that the abscess is always secondary in importance, as well as in development, to the primary lesion, whether that is situated in the bone or in the joint. And it follows from this, that whatever methods are to be adopted in dealing with these secondary complications, they must be such as will interfere as little as possible with the treatment of the primary disease. This is, I think, the fundamental principle underlying this whole discussion, from whichever side it is viewed. The presence of pus diminishes somewhat the chance of an ideal result. There is a little more liability to ultimate deformity and limitation of motion; but this is very much less than was formerly supposed, and will be still less in proportion as the abscess is prevented from interfering with the continuance of effective mechanical treatment.

The possibility of a spontaneous disappearance of a cold abscess by inspissation and absorption is now nowhere disputed. Many cases have been reported by Judson, Ridlon, Schaffer, Gibney and others. I have myself seen one psoas abscess and one abscess in connection with tubercular disease of the hip entirely and permanently disappear. Such instances are, however, relatively very few, — far too few to be held out as an inducement never to interfere, unless it can be shown that by letting them alone we in nowise increase the difficulties or dangers of their subsequent management, in case they are not absorbed.

There are, moreover, many cases in which pain, loss of appetite, anemia, or other constitutional disturbance seem to be dependent upon the presence of an abscess, where interference seems imperative, as it does also where the location of an abscess would prevent the use of suitable apparatus. Such cases cease at once to be the subject of controversy. The debatable ground is that occupied by those whose development is unaccompanied by any constitutional disturbance or by any interference with the continued use of mechanical support. Are they to be opened as soon as recognized, or should they be allowed to remain until they are ready to discharge spontaneously?

When pus has escaped into the inter-muscular spaces about the bone or joint in which it has originated, the abscess tends to increase slowly, but steadily, in the direction favored by gravity. Even after fluctuation has become quite superficial it may continue to spread for weeks or even months before spontaneous rupture takes place. It is liable all the while to secondary infection through the skin by more active pus-producing bacteria; its spontaneous opening is more likely to be so situated as to provide insufficient drainage, and the larger the abscess cavity, all of which is lined with a tuberculous membrane, the longer time will be required to heal it, with at least an equal chance of general or systemic infection. These reasons are, I think, sufficient to prevent us from allowing even those abscesses which do not give rise to any constitutional disturbance or interfere with mechanical treatment, always to pursue their natural course. If, however, it is admitted, as I think it should be, that the chance of septic infection of the sinus or abscess cavity is as great after a natural as after an artificial opening, and that the length of time during which the discharge will continue depends upon the condition of the bone or joint from whence it comes rather than upon the manner in which it has escaped through the skin; if this be admitted, and I do not see how it can be denied, there is no advantage to be gained from leaving any of these abscesses alone, except those which may spontaneously disappear. Can we distinguish these beforehand?

In two cases of abscess complicating tubercular disease of the hip recently operated upon by me, cultures and cover-slip preparations were taken from each. In the first, the culture tubes were sterile, while the cover slips showed the presence of tubercle bacilli; in the second, the culture tubes revealed the staphylococcus albus and citreus, while the cover slips were negative. It is, I think, unusual, even in undoubted tubercular cases, to be able to demonstrate the presence of the bacilli; but even when they cannot be found and the cultures are sterile, inoculation experiments prove the tubercular character of the pus. There are, then, as typified in these two cases, two distinct sorts of pus occurring in connection with bone and joint tuberculosis, namely: That which arises from the tubercle bacillus alone, and that which is due to a mixed infection from the simultaneous presence of the tubercle bacillus and other pyogenic cocci. When a mixed infection is present, even if there are no evidences of constitutional impairment, it is exceedingly unlikely that spontaneous resolution will ever occur. Those abscesses which disappear after one or more aspirations are, as a rule, instances of pure tubercular infection, and it is probable that such is also the character of those which disappear of themselves. If, then, we could distinguish beforehand the cases of pure tubercular infection from the mixed infections, we should have reasonable grounds for leaving the first to nature, so long as their growth was not excessive and until they threatened to open spontaneously, and for operating always on the second. Can we make this distinction? In this connection I am under great obligation to Dr. Richard C. Cabot for permission to refer to an unpublished article by Dr. John Dane, bearing upon the relation of leucocytosis to tubercular inflammations. Dr. Dane has shown bacteriologically, and the work is confirmed by Dr. Cabot clinically, that "in pure tubercular abscess, as in all purely tubercular

<sup>1</sup> Read before the Massachusetts Medical Society, June 9, 1896, and recommended for publication by the Society.

lesions, leucocytosis is absent. If at any time the infection becomes a mixed one through the advent of pus cocci, leucocytosis occurs. For instance, many cold abscesses of rib, hip, vertebra, etc., show no leucocytosis till opened, then the white cells rise." If these observations shall be confirmed by further investigation, I think it fair to assume that active interference should be postponed so long as leucocytosis is absent. For the same reason, those cases in which cultures obtained by aspiration remain sterile, may profitably be left to themselves. The presence of leucocytosis or of colonies of pus cocci in our cultures is an indication for active interference. When should the opening be made?

We are speaking now not of the cases in which the patient's general condition or the proper management of his bone or joint lesion are affected by the presence of the abscess. These should be operated upon as soon as such interference is recognized. Where there is no such interference, I think the opening may be advantageously delayed until the abscess has become quite superficial,—such a course will allow the opening to be made more easily, accurately, and with less dissection through healthy or uninfected tissues. I should favor interference rather than waiting for spontaneous opening, because I can control the point of drainage, prevent the unnecessary extension of the tubercular process, and the better control the chance of infection from without.

What of the methods of interference? Many have been suggested, of which the most important are: Aspiration; aspiration with irrigation, and iodoform injections; simple incision; and free incision, with curettage. Aspiration has never seemed to me a scientific procedure, except when undertaken merely for exploratory purposes, and in my hands has simply resulted in an ultimate sinus at the point of insertion of the needle. Aspiration, with irrigation and the injection of iodoform, was a few years since heralded as a specific for these local tubercular lesions. Most encouraging reports came to us from Billroth, Mikulicz, Bruns, and von Moorchhof. The method has, however, never yielded such brilliant results in this country, and, although enthusiastically championed by Senn, has never found favor in our true orthopedic clinics. The real issue lies, I think, between simple incision and free incision with curettage. The latter aims to remove all the tubercular product, and secure, as near as possible, primary union. Its advocates seem to overlook the source from which the pus started, and from which it will continue to come, until it is itself exhausted. In too many of these cases the primary union is gained but for a short time, only until the sinus leading directly to the original disease can be re-established. It is forgotten that the abscess is but a secondary consideration—the original disease of the bone or joint the primary and all-important one; and that the length of time during which suppuration will continue depends almost entirely upon the condition of the original lesion, and has comparatively little to do with the method by which the abscess is treated.

It is not at all uncommon, when an abscess opens spontaneously at its most dependent part before it has become very large, and when it has not been in any way interfered with, for us to see early, spontaneous healing and gratifying results, so far as the restoration of function is concerned.

While I believe that the situation of the drain and the limitation of the growth of the abscess make the artificial opening the better one, I think we can learn much from nature's own method. I was very much impressed, when house officer at the Boston Children's Hospital, with a series of cases treated by Dr. A. T. Cabot with a small opening made in the most favorable place and without any interference with abscess cavity by irrigation or curette. I have since occasionally practised the same method myself, and I believe that it approaches more nearly the natural one, causes less constitutional disturbance, and is less likely to result in constitutional infection, than other more radical measures; and when undertaken with strict precautions to prevent infection from without, seems to me to be the most desirable method of treatment.

#### RÉSUMÉ.

(1) An abscess occurring in connection with tubercular disease of the bones or joints is always secondary in importance, as well as in development, to the primary disease. Its treatment must not, therefore, in any way interfere with the treatment of the original lesion.

(2) When the abscess is accompanied by any evidences of constitutional impairment, or interferes in any way by its location with the use of proper mechanical treatment, it should be immediately opened. When there is no interference with general health or with mechanical treatment, the abscess, if it presents a pure tubercular infection, may be left until it is nearly ready to open spontaneously. If it presents a mixed infection, it is to be opened at once.

(3) All cases are to be opened as soon as they approach the surface, to avoid unnecessarily extensive burrowing.

(4) Of the methods commonly used in opening these abscesses, aspiration with irrigation, free incision with curetting, all seem to give inferior results to those obtained by simple incision in most dependent portion, with the least possible interference with the walls of the abscess.

#### THE TREATMENT OF CLUB-FOOT.<sup>1</sup>

BY AUGUSTUS THORNDIKE, M.D., BOSTON.

THE limits of this paper compel me to speak only of the treatment of congenital equino-varus. All cases vary from the therapeutic standpoint in two ways: in the amount of *distortion*, slight, moderate or severe; and the amount of *resistance* offered to manual replacement.

Either age or a relapse after the deformity has once been corrected are adverse factors, and modify not only the prognosis but lead to the selection of a more radical method of treatment. For instance, a child of fifteen, with moderate equino-varus, may, with suitable apparatus, bring the foot into a correct position, and after retaining it there by an appliance for a year, abandon the apparatus and be cured permanently. On the other hand, a child of the same age who has been straightened and relapsed presents a more resistant foot and much greater difficulties to the orthopedist, and will usually require open incision or even osteotomy. It is, therefore, not surprising to

<sup>1</sup> Read before the Massachusetts Medical Society, June 9, 1896, and recommended for publication by the Society.

find a number of different procedures advocated. Every case, whether operative or not, requires mechanical treatment for a considerable time—six to eighteen months after the deformity has been entirely corrected—to prevent relapse. A partial correction of club-foot is useless, for relapse will surely follow.

The mildest form of correction consists in manual replacement two or three times a day by the parent, bandaging with a soft flannel bandage between whites. This is obviously useful only in the mildest cases and in very young babies.

With adhesive plaster the foot may be kept corrected a little more firmly, but in most babies a firm retentive apparatus is necessary; either a light plaster bandage applied holding the foot corrected as far as can be comfortably borne until the plaster has set, or else a light tin shoe in which the foot is strapped with adhesive plaster or bandage. The importance cannot be overestimated of beginning treatment at once in very young infants, for their feet are less resistant the younger they are.

Another useful apparatus consists of a light wire upright having a spur of fairly stiff wire towards which the foot may be drawn by the turns of the bandage. But the form of appliance now most commonly used for babies at the Children's Hospital consists of the Taylor club-foot shoe, slightly modified, and applied with an adhesive-plaster extension strap to keep the heel down, the upright being continued to the waist where a long posterior arm serves to evert the foot. The shoe is first applied to the sole of the foot, irrespective of the position of the upright, and is firmly fastened by adhesive plaster and bandage; the foot is then brought into correct position by pushing the upright into place, where it is held by the strap and bandage. These shoes are worn two or three weeks continuously and reapplied many times. By bending the upright the foot can be over-corrected after several applications. This apparatus is also useful after operation.

Another modification of the Taylor club-foot shoe, recently devised by Dr. E. H. Bradford, is for older and more resistant cases. The object of this apparatus is to secure a firm grasp of the os calcis and astragalus before applying any force to correct the inward and downward displacement of the anterior part of the tarsus. It consists of a Y-strap so applied that the tail of the Y passes under the sole of the foot from without inwards, while the two branches pass, one around the heel securing the rear part of the calcaneum, and the other over the outer side of the neck of the astragalus. In this way a very firm grasp of the os calcis is first obtained and the correction effected by bringing the upright against the leg as in the ordinary Taylor club-foot shoe.

The more resistant forms of club-foot require operation and prolonged mechanical after-treatment.

Operations may be divided into three groups: (1) tenotomies; (2) incisions; (3) operations on the bones (osteotomies and excisions).

#### TENOTOMIES.

In the severe infantile cases tenotomy aided by a moderate amount of force applied with the hand is sufficient. In the older and more resistant feet, where greater force is needed, the Thomas wrench or the lever of Bradford is used after tenotomy to obtain

correction. The principle of these instruments is simple and effective. Tenotomy for club-foot at the Children's or the Good Samaritan Hospitals is usually done upon the following simple rule: "to divide any and all bands which can be felt tense when the foot is held as nearly straight as possible, taking care to avoid the arteries and nerves." The following structures are sometimes divided: the plantar fascia, tendo-Achillis, tibialis anticus, tibialis posticus and abductor pollicis muscles, and the anterior portion of the deltoid ligament, part of the astragalo-scapoid ligament or of the calcaneo-scapoid ligament. Most operators prefer not to divide the tendo-Achillis until the varus position has been entirely corrected, and sometimes this is left for a subsequent operation.

If the deformity cannot be completely eradicated by tenotomy it is better to do an open section *à la Phelps* at once: for partial correction means relapse. After tenotomy and replacement with the lever a small sterile gauze dressing is applied, and a plaster bandage from the tips of the toes to half-way up the thigh, the knee being partly flexed, otherwise the bandage will twist and allow the toes to point in. When the plaster is removed a retentive apparatus, generally one of the modified Taylor club-foot shoes, is applied and constantly worn till all danger of relapse is over, that is, one or more years.

#### OPEN INCISION.

The method of Phelps has become of late the favorite method of treating resistant cases. An incision is made from the centre of the sole to a point a finger's breadth in front of the internal malleolus, and is carried successively through all resisting soft parts to the bone if necessary, until the foot can be brought into an over-corrected position and stay so. The incision is then covered with a strip of sterile gutta-percha tissue, and a sterilized gauze dressing applied with plaster bandage, allowing the wound to fill and heal by blood-clot.

The operation may be rendered bloodless by the Esmarch bandage. The dressing if sterile may remain a month. The retention shoe may be applied with dressings before the wound is healed. After-treatment must be long continued, as relapses sometimes occur.

#### BONE OPERATIONS. OSTEOTOMIES—EXCISION OF ASTRAGALUS.

Bone operations involve mutilation of the skeleton of the foot and are done only when the operator fails to correct by the Phelps method. It should be done at the time of the other operation, and, usually, a linear osteotomy of the neck of the astragalus or of the anterior part of the calcaneum will enable the over-correct position to be reached.

Wedge-shaped excision of the tarsus involves too great mutilation and is seldom called for, even in the most resistant of adult cases.

Excision of the astragalus is seldom done at the Children's or Good Samaritan Hospitals, and I have yet to see any club-foot I would amputate. All club-feet are curable either by mechanical means alone, or by a simple operation followed by mechanical treatment. Failures are due primarily to insufficient after-care, either because the mechanical treatment is not kept up long enough, or some important detail is neglected.

SOME AFFECTIONS OF THE FEMALE BLADDER.<sup>1</sup>

BY EDGAR GARCEAU, M.D., BOSTON.,  
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THE Kelly cystoscope brings all parts of the bladder, the openings of the ureters and the urethra under the eye, so that we actually see the disease before us. Through the cystoscope we may make applications to ulcers of the bladder; we may touch, for instance, tubercles with nitrate of silver; we may remove foreign bodies and small calculi. Diseases of the bladder itself are, therefore, amenable to local treatment. The urine can be drawn from each kidney, and can be examined with reference to the working efficiency of each; this is particularly important when the question arises of removing one kidney for disease, for it can be determined with accuracy just what the condition of the opposite kidney is, thus eliminating the possibility of removing a diseased kidney when the opposite one may be equally affected.

In a case recently seen with Dr. S. Breck this question arose. It was in the case of a young unmarried woman who had had pain in the left lumbar region for some time with pyuria. She was much reduced in health. Both ureters were catheterized, and urine collected from each. There was pus from the right kidney as well as from the left, showing that both were affected. This altered the aspect of the case.

Kelly relates the case of a woman who had been suffering from indigestion, headache, a sense of pressure in the bowels and pyuria. The right renal pelvis was catheterized with a long catheter; thirteen cubic centimetres of urine flowed in two minutes; normally only one cubic centimetre of urine flows in two minutes. This showed obstruction at the pelvic outlet. Suction with an aspirator brought away some pieces of uric acid and the end of the catheter was scratched, so that there was no doubt about the diagnosis. She was operated on, and a renal calculus of small size removed by lumbar incision.

In another of Kelly's cases there was stricture of left ureter with pyo-ureter above it. She was cured by passing bougies, and washing the ureter with bichloride solution, but there was trouble in keeping the stricture open. A most important feature of the Kelly ureteral catheters is the feeling of safety they give when *in situ* during a hysterectomy, either abdominal or vaginal. The catheter can be felt throughout the operation and there is consequently no danger of wounding the ureter.

The cystoscope has brought out from obscurity many diseases of the female bladder, some of which have heretofore been ascribed to the vague action of the reflexes, or classed as *neuroses*. The picture of a nervous woman broken down in health, suffering from irritable bladder, is a familiar one. When no apparent cause for this condition was present, the physician was easily led into the error of mistaking cause for effect and of attributing the irritable bladder to a manifestation of an irritable nervous system. The urine in these cases might be quite normal. The cystoscope has shown that these "functional diseases" have almost without exception a definite pathological condition which is amenable to treatment. The diagnosis of bladder affections without the cystoscope has been particularly difficult because the magnitude of the

lesion may have no relation to the severity of the symptoms. For instance, in one case the bladder was found to contain numerous ulcers, some at the fundus, some at the ureteral orifices, besides these there was a cheesy mass occupying the site of the right ureteral orifice—and yet the only symptom complained of was occasional bloody urine. Next to this case may be placed another in which the woman was tortured night and day by a harassing desire to urinate constantly. Her sleep was disturbed, she could do no work, and she was reduced to a state of invalidism. Yet the cystoscope showed only a hyperemia of the vesical neck and trigonum. In another case of acute post-operative cystitis the only symptom was the presence of large amounts of pus and mucus in the urine. On examination with the cystoscope the trigonum was seen to be of a bright, glistening, purplish-red hue, while the rest of the bladder showed here and there patches of dilated blood-vessels which stood out in bold relief; no part of the bladder was exempt; the fundus, however, was least affected. The point of interest was that there was relatively no inflammatory appearance about the neck of the bladder the most sensitive portion; this probably accounted for the absence of the usual symptoms, tenesmus and frequent micturition.

The urine is retained in the bladder by two separate forces, the reflex contraction of the muscles of the sphincter and the elasticity of the sphincter itself. When the sensibility of the bladder is exaggerated by inflammation or hyperemia, the reflex impulse to micturate is increased in intensity, producing intolerance of urine or irritable bladder. Under these circumstances the urine has to be discharged by a reflex act as soon as it has accumulated in small quantity in the bladder. The impression which excites this discharge is accompanied by a sensation, but may be too urgent to be resisted by the will; in any event it can be held back but a short time. The most sensitive portion of the bladder being the vesical neck, as it is most abundantly supplied with spinal nerves, it is readily seen that apparently insignificant lesions may cause intolerable suffering. This brings us to the consideration of a very common affection of the bladder which may be called "hyperemia of the vesical neck and trigonum." It is a very common affection and may give rise to a degree of suffering which is not in proportion to the magnitude of the lesion. It may cause the nervous break-down of the strongest constitution. Hyperemia may affect the vesical neck, the trigonum, the urethra, or all three. As a rule the vesical neck is the usual seat. Not only is it obscure in its cause but it is likewise most difficult to treat and will sometimes resist every known therapeutic agent. The following is a typical case of this affection and illustrates exceedingly well the different phases of the disease:

Mrs. W. was a woman thirty-three years old who had been delivered of five children, the youngest being ten years old. From the time of the last confinement, when she had septicemia in a severe form, she was never well. Constant pelvic pain, exhausting and frequent hemorrhages and leucorrhea reduced her to an invalid and made her life not worth living. During the ten years of her illness she had repeated attacks of pelvic-peritonitis which confined her to bed for days at a time. I did a vaginal hysterectomy by Pean's method of morcellation, last September, removing a large uterus and ovaries and tubes enlarged to three times the normal size by inflammation. She recovered

<sup>1</sup> Read before the Gynecological Section of the Massachusetts Medical Society, March 25, 1896.

well from the operation and was up in three weeks. At once she had trouble with the bladder. She had frequent micturition and dysuria, the pain occurring during and after the act. This is contrary to the usual rule; for in most cases of hyperemia pain is absent, there being only increased frequency and an irresistible desire. The pain did not last long with her, and in a few weeks it disappeared. She was obliged to urinate every half-hour during the daytime, and during the night she got up seven or eight times or more. Under these circumstances, with broken sleep and constant suffering, it is not surprising that she developed a condition of extreme irritability, which manifested itself by attacks of crying, profound mental depression, loss of appetite, and violent outbreaks of temper. The urine was now examined, and was found to be quite normal, without pus or other abnormal constituent (later she developed oxaluria, however).

Here, then, was a case which formerly would have been classed as a functional disease of the bladder dependent on an irritable nervous system. The patient was examined under cocaine with the cystoscope three weeks after she had left her bed. The whole urethra was of an intensely scarlet-red hue, and likewise the neck of the bladder and trigonum; there were no superficial erosions of epithelium. On vaginal examination there was found a tender cicatrix in the right broad ligament about the size of a pigeon's egg. The treatment began by making applications of silver nitrate, three per cent., to the neck of the bladder and urethra, and giving bipolar vaginal faradic electricity. This, with tonics and the various diuretics has been the treatment. The result has been decidedly unsatisfactory so far.<sup>3</sup> She is still troubled by frequent micturition and in addition has partial incontinence of urine. A curious phenomena in her case is aggravation of her symptoms at the end of each month, the time of her former menstrual period. It lasts a few days and then subsides: she is feeling best in the middle of the month. It is worth mentioning that her incontinence appeared three weeks after a cystoscopic examination, so that it had no relation with this. The incontinence may be looked upon in her case as a later stage of the disease when the sphincter can no longer perform its function. Among other things that were tried was the treatment with Clark's balloons. By this method a rubber balloon smeared with ichthol is introduced into the bladder and blown up; the ichthol comes in close contact with the inflamed areas and it is claimed is more efficacious than when simply applied with a cotton stick. The balloon caused intolerable suffering and had to be discontinued. She has most relief when lying on a sofa with her head low and her feet elevated.

Besides this case of vesical hyperemia I have had, up to the present time, five others, making six in all. The complicating diseases were respectively, anteversion, retroversion (with pessary), two of endometritis, and a case of general subinvolution after confinement. One of the endometritis cases was really a case of subacute cystitis, for which a vesico-vaginal fistula was made with entire success, the local treatment having failed. This case was distinctly traceable to catheter infection three years before. A most faithful trial

of Kelly's treatment was made, extending over a period of four months without any appreciable success. This leaves us, including Mrs. W.'s case, five to analyze. In one only was a complete cure effected. It was the case of subinvolution. When she came under treatment she was urinating every hour in the daytime and got up three times each night. She had intense vesical hyperemia affecting the neck, which was made to disappear in four weeks by applying solutions of nitrate of silver alternating with glycerite of tannin to the neck of bladder. The other four cases were much relieved, but not cured. Applications in all cases were beneficial, and relieved for a certain time.

The failure to cure these cases suggests that the vesical hyperemia is part of a general pelvic hyperemia dependent on the primary disease. The vesical irritability is due to a hypersensitive condition of the vesical neck produced by the congestion at this point. This seems reasonable when the intimate anastomoses between the uterine and vaginal arteries with the vesicals are considered. The primary pelvic lesion causes pelvic congestion which involves the vesical neck. The constant desire to urinate intensifies the pelvic congestion; and so a vicious circle is established. This may explain the chronicity of the affection. In many cases of vesical hyperemia rectal hemorrhages are observed; they are always beneficial and act by relieving congestion. In one case recently observed severe vesical irritability after operation at once ceased with free catharsis.

Thinking that perhaps the catheter might be responsible for vesical irritability after operation, an analysis of 43 cases was undertaken.<sup>4</sup> These cases were individually closely followed.<sup>4</sup> Of these, 22 had no subsequent bladder trouble, and 21 did. Of the 22 cases in which there was no trouble after operation, 13 had had vesical irritation before operation, which ceased as soon as the operation was done. The operation therefore seemed to have a beneficial effect. Of the 22 cases the catheter was used in 10. In the 9 cases in which there had been no previous bladder trouble, the catheter had to be used only three times. In the 21 cases in which there was vesical irritability after operation it was found that all, with a single exception, had had previous vesical disturbance; the catheter was required in 14 of these cases.

To sum up, out of the 43 cases, 33, or 76 per cent., had had previous bladder trouble. *This shows the frequency of vesical irritation in pelvic diseases.* In the 10 cases in which there was no previous bladder trouble the catheter was required in four cases; no irritation followed. Of the 33 cases, in 24 the catheter was used. Looking at the 22 cases in which no trouble followed operation we find 10 in which the catheter was used. This is certainly evidence that the catheter does not cause irritation. Looking now at the other 21 cases we find the catheter was used in 14. They were either better or no worse of their irritation after operation with the exception of six, and these six all suffered severely from bladder irritability before operation. It seems to be a fair conclusion, therefore, that *the catheter, when properly used has no effect in causing vesical disturbance, and that it will be found that those having vesical irritability after operation are those who have had it before.* It is not argued

<sup>3</sup> This case was finally treated by making an artificial vesico-vaginal fistula. Entire relief followed, especially with reference to nervous symptoms.

<sup>4</sup> Operative cases in Free Hospital for Women.

<sup>4</sup> See article in American Journal of Obstetrics and Diseases of Women and Children, vol. xxxiii, No. 6, 1896, The Influence of the Catheter in Causing Vesical Irritability, Edgar Garceau.

that the catheter does not cause infection when improperly used. In three cases out of the 43, a distinct history of infection was obtained, dating in all three from retention of urine after confinement when the catheter was used.

The treatment of cases of vesical hyperemia is very unsatisfactory at times. Attention to the general health is of paramount importance. Digestion should be attended to, and, above all, the bowels should be kept freely moving in order to relieve the pelvic congestion as much as possible. It is needless to say that any coexisting pelvic disease should receive appropriate treatment. Local applications of nitrate of silver and in some instances of glycerite of tannin and ichthyol have been distinctly beneficial in my experience. Great relief will be given by the use of the fine coil of the faradic current; here the bipolar vaginal electrode may be used or one electrode may be placed over the bladder on the abdomen and the other in the vagina. In one patient this treatment was always followed by a good night's rest. If the urine is altered abnormally this should be corrected. The various diuretics and vesical sedatives I have tried, but the results have not been remarkable.

Finally, if the patient continues to suffer, absolute rest in bed with mild, unstimulating diet must be insisted upon. This measure will always be productive of good results. If it fails and the trouble continues, the question of artificial vesico-vaginal fistula is presented for consideration. In this we have a remedy which is astonishing in its immediate results. The relief given is most grateful to the patient. The very night of the operation she sleeps soundly and wakes up refreshed in the morning. The urine drains away through the vagina, and gives a much-needed rest to the irritable sphincter. After this operation the woman quickly recovers her lost nervous tone, is more placid and peaceful, and is not harassed by the continual desire to micturate which made her life a perpetual torment. The fistula must be left open a sufficiently long time and in cases of cystitis the pus in the urine must have entirely disappeared before the opening is closed. Another point to be emphasized is that the fistula must be made close to the sphincter, for if it is made high up near the cervix the urine pockets below it, and so the operation fails because the irritation is kept up as before, the drainage being imperfect.

Pregnancy need not be considered a contraindication to this operation; on the contrary, the occurrence of pregnancy may so intensify the symptoms from the increased hyperemia as to render the operation imperative. This was so in the case of cystitis already referred to, in which I made a vesico-vaginal fistula. Her sufferings were intense and she insisted upon having relief. The operation was entirely successful, and the pregnancy (three months) was not disturbed.<sup>5</sup> After the confinement, if the urine is normal, the fistula will be closed. She now washes out her bladder herself at home, twice a day with boracic-acid solution, using antiseptic precautions which were taught her before leaving the hospital.

In conclusion, a word may be said about the method of making examinations of the bladder. The most comfortable position is the dorsal for the patient; the examiner also will find it easier to work with the woman in this position. In the knee-chest position

the ureteral orifices are more prominent but if the examiner is near-sighted he will find it rather difficult to get close enough to examine properly on account of the cramped position he is obliged to assume. If ether is given, the dorsal position will be chosen for obvious reasons. I have found that ordinary daylight with or without sun is quite satisfactory, and that the illumination is amply sufficient. The table should be placed close to a window, however, in order to have the light as strong as possible. If artificial light is chosen, a good strong gas-light must be used, preferably an argand burner. If ether is given the greatest care must be exercised not to burn the skin; this is an accident that easily happens, and the burns are most annoying and may be very serious. If the ureter is to be catheterized the best place for the light, if gas be used, is at the side of the woman which corresponds to the ureter to be examined, and not on the abdomen as is usually done. The examiner stands not in front of the woman but on the side opposite to the light. If he examines her left ureter the light is on the woman's left side and he stands on her right. This brings the ureteral opening directly in a line with the light and the examiner's eye and avoids cramped positions; the illumination is much better as the light is reflected directly and not at an angle. For this idea I am indebted to Dr. Edward Reynolds, as he was the first to suggest it. The examination is made much easier by using it.

#### CASES OF ABDOMINAL SURGERY OCCURRING IN THE FIRST SURGICAL SERVICE OF THE BOSTON CITY HOSPITAL DURING THE FOUR MONTHS' SUMMER SERVICE OF 1895.

BY FRANCIS S. WATSON, M.D., *Visiting Surgeon.*

(Continued from No. 8, p. 194.)

**CASE 23.** Primary cancer of the gall-bladder, secondary extension to the liver. Resection of the gall-bladder and a large portion of the liver. Recovery from the operation. Death two months later from extension of the disease.<sup>1</sup>

January, 1895. The patient, a woman about fifty-seven years old, was in good health until sixteen months ago, when she had an attack of jaundice accompanied by colicky pain in the right side of the abdomen beneath the free border of the ribs. These symptoms only lasted about four days, but in the course of the next eight months she had six similar attacks, slight jaundice being associated with each one. The color of the stools was not noticed, but the urine was seen to be very dark at these times. No nausea or vomiting at any time. The last of these attacks occurred eight months ago. During the last four months the patient has lost flesh and has become very anemic.

Five weeks ago, for the first time, the patient noticed a hard bunch beneath the free border of the ribs on the right side of the abdomen; this she thinks has increased somewhat in size since then. She has slight jaundice and marked anemia. The urine is of high color, specific gravity 1.013, with a slight trace of albumin; the sediment contains a few red blood-corpuscles, hyaline and fine granular casts. In the right side of the abdomen, and most prominent beneath the tip of

<sup>5</sup> She was delivered at the end of nine months, and the fistula did not complicate convalescence.

<sup>1</sup> This case is published by permission of the writer's colleague, Dr. H. L. Burrell, to whose courtesy the opportunity to operate upon it was due.



eleventh rib, there is a large, hard, slightly movable tumor extending downward to the crest of the ilium and nearly to the median line in front. The dullness on percussion extended over the whole surface of the tumor and was continuous with the liver dullness, except for a small space below the tip of the eleventh rib, which was tympanitic and was due to the interposition of a portion of the colon.

Operation, February 6, 1895. A longitudinal incision, five inches long, was made through the linea semilunaris over the most prominent part of the tumor. Upon opening the peritoneal cavity the tumor was seen to consist of a much-enlarged gall-bladder, infiltrated with cancerous growth, projecting beneath the margin of the liver, and adherent to its under surface and also to two neighboring coils of the intestine; the cancerous growth extended for some distance into the liver and fused the gall-bladder into one solid mass with the lower part of the liver. The growth did not seem to extend beyond the beginning of the cystic duct, and was apparently circumscribed in the liver. The growth had pushed the lower part of the liver downward and forward and against the rib, so that a deep sulcus was made in it by the pressure of their free border. The diseased mass was separated from its intestinal adhesions, and could then be brought outside the abdominal wound, after the latter was somewhat enlarged laterally. The gall-bladder, and about three inches of the lower and anterior part of the liver, including all the diseased part of the latter which was visible, were removed in three separate masses after placing three stout elastic ligatures around the base of the tumor and through the substance of the liver beyond the disease; these were drawn tight and left *in situ*. There was almost no hemorrhage; the abdominal wound was partially closed, a considerable space being left open for drainage through which large drainage-tubes were inserted; and the cavity formerly occupied by the growth was packed with iodoform gauze. The gall-bladder was tied off just above its junction with the cystic duct; it contained 64 small gall-stones.

The patient rallied well from the operation; and after the first four days there was marked gain in the appetite. There was entire cessation of pain during the next six weeks; there was also a marked diminution in the cachexia. She was, in fact, entirely comfortable during this period; at the end of it, however, pain reappeared, and slowly increased until her death, which occurred at the end of the second month after the operation, owing to exhaustion, due to extension of the disease into the liver and metastatic nodules in the lungs and kidneys.

#### CASE 24. Gall-stones. Cholecystotomy. Recovery.

June 16, 1895. The patient, age forty-seven, the mother of seven children, was in good health until two weeks ago, when she was suddenly seized with lancinating paroxysmal pains in the region of the gall-bladder. The bowels have not moved for one week. There has been no vomiting or jaundice. She had a similar attack one year ago, also without jaundice.

The patient is a large, fleshy woman with pendulous abdomen. Her strength is good. Pulse strong and regular. Temperature 101° F. She lies with legs flexed, complains of great pain in the upper part of the abdomen. A freely movable, pear-shaped tumor of the size of the fist is to be felt in the right hypochondrium in the region of the gall-bladder. It

is connected with the liver, and moves up and down with respiration.

Operation, June 16, 1895. The gall-bladder was exposed by a vertical incision in the linea semilunaris. The peritoneum was not adherent at this point. The moderately distended gall-bladder extended to about four inches below the lower border of the liver. There was a moderate quantity of ascitic fluid in the peritoneal cavity. There was an area of localized peritonitis of recent date around the gall-bladder, to which were attached by recent adhesions a small part of the omentum and of the surface of the small intestine. The upper surface of the gall-bladder was firmly adherent to the under surface of the liver. The gall-bladder was opened by an incision one inch long through its summit; the wall of the gall-bladder was one-half inch thick. There were about four ounces of thick, colorless, starchy fluid in the gall-bladder. Its mucous lining was acutely inflamed and bled readily. All three ducts were widely dilated. One hundred stones of the size of cherry-stones were removed by the finger and forceps. No more stones were found, either on examination of the ducts by the finger externally or internally by the probe, and the latter passed without obstacle through the length of the cystic and common ducts. The bladder was left open and sutured to the external wound. A drainage-tube was inserted. The time of operation was one hour.

The convalescence was uninterrupted; the wounds healed completely by granulation one month after operation, at which time the patient was discharged well.

#### CASE 25. Gall-stones, localized peritonitis, intestinal obstruction. Cholecystotomy. Recovery.

The patient, a woman thirty-six years old, four years ago had an attack of abdominal pain associated with jaundice. She recovered in a short time, and remained well until four days ago when she was seized with a sharp pain in the region of the gall-bladder, and noticed a tumor in the same locality. The bowels have not moved since the beginning of this attack. The abdomen is moderately distended and tympanitic. In the region of the gall-bladder there is a large, pear-shaped tumor, pressure upon which is very painful. A distinct friction rub can be felt in this locality in connection with the movements of respiration. The patient is slightly cyanotic and much prostrated. There has been frequent vomiting during the last few days. There is no jaundice. The urine contains no bile pigment.

Operation, July 22, 1895. A transverse incision, parallel with and below the free border of the ribs, was made over the most prominent part of the tumor. The peritoneum was thickened and adherent to the gall-bladder, which was moderately distended, and inflamed throughout; its walls were three-quarters of an inch in thickness, and its mucous lining and peritoneal investment were deeply congested; there was localized peritonitis of recent date, with numerous delicate adhesions between the gall-bladder and the coils of distended intestines in the neighborhood.

The gall-bladder was opened by an incision in its summit. It contained a fluid of the color and consistence of thin starch. There were no stones in the gall-bladder itself. The cystic duct contained two large stones, which were faceted, the second one in such a way as to suggest another one beyond it;



this, however, could not be found. It was afterward learned that the patient had passed a stone by rectum, a few days previous to operation. The gall-bladder was united to the abdominal wound by interrupted sutures of silkworm gut, and a drainage-tube inserted into it.

July 26th. Bile flowed through the drainage-tube the first time on the second day after the operation. On the same day the bowels moved freely. The wound in the gall-bladder did not wholly close; otherwise the patient made an excellent recovery.

Two months after the operation, an operation for closing the fistula was undertaken. The cicatrix of the old wound was excised on either side of the fistula; the gall-bladder was exposed and freed from its adhesions; the cicatricial tissue about the fistula was excised; and the edges of the fresh wound were brought together and sutured tight with silkworm gut; the abdominal wound was then united.

This operation was entirely successful to all appearance, and the patient was discharged well at the end of a month. Two months later it was reported that the fistula had reopened, but the writer has not seen the patient.

**CASE 26.** Gall-stone impacted at the entrance of the common duct into the duodenum. Cholecystotomy. Death.

The patient was a woman forty-two years old, who was in good health until three years ago, when she had the first attack of biliary colic. She has had three attacks since then, besides the present one, which appears in the form of moderate colicky pains in the region of the gall-bladder. There is slight jaundice; the stools are clay-colored. There is no tumor to be felt in the region of the gall-bladder, and no marked tenderness anywhere in the abdomen. The pulse is weak, and the patient's general condition is very poor.

Operation, July 23, 1895. A transverse incision was made over the region of the gall-bladder, parallel with the free border of the ribs. The gall-bladder was exposed without difficulty, and was to all appearance normal. It was thought that a small stone in the cystic duct could be felt by the finger. The summit of the gall-bladder was incised sufficiently to admit the finger, but no stone could be found by the most careful search of the ducts throughout their course, by probe or by following their course as far as the duodenum. The wound in the gall-bladder was then united by interrupted Lembert sutures of silkworm gut, and the abdominal wound was wholly closed.

There was but little shock at the time of the operation; but the patient did not recover consciousness after it, and died about twenty-four hours afterwards.

At the autopsy a large, single gall-stone was found impacted in the duodenal end of the common duct; one-half of it projected into the bowel, the other half was firmly retained within the duct, while the part surrounded by the orifice of the duct was constricted so as to form a well-marked neck between the two larger parts of the stone. The liver contained numerous small abscesses scattered through its substance. The suture of the gall-bladder was perfectly tight.

**CASE 27.** Perforating appendicitis. Death.

Male, fifty years of age. Duration of attack eight days. Onset by sudden severe pain in the right iliac fossa, which has persisted ever since.

On entrance to the hospital the patient was cyanotic; the extremities were cold, and he was in a state

of beginning collapse. The abdomen was greatly distended, its walls rigid, and a large, ill-defined tumor occupied the right iliac fossa. There was great tenderness at McBurney's point.

Operation, June 6, 1895. The abdomen was opened by a three-inch incision parallel with Poupart's ligament and across the most prominent part of the tumor. The peritoneum was thickened and edematous. The appendix lay across the iliac vessels. It was surrounded by an abscess containing about four ounces of foul pus, which was not well walled off from the peritoneal cavity by recent and delicate adhesions. The appendix was perforated near its tip; it contained no foreign body. It was tied off with a single silk ligature, without inversion or the making of flaps.

Toward the end of the operation the patient became deeply cyanotic and the respiration was much embarrassed. Six hours later he died, with evidences of acute edema of the lungs. No autopsy.

**CASE 28.** Perforating appendicitis. Appendix not removed. Recovery. Abdominal incision supplemented by a lumbar one for drainage.

The patient, a young man of twenty-three years of age, was attacked by a sharp pain about the umbilicus, the pain becoming localized in the right iliac fossa on the following day. The attack began three weeks before his entrance to the hospital. The pain became less after the third day, but has continued throughout the whole time. Temperature on entrance was 103° F; pulse 100 and strong. There has been no constipation throughout the illness. There is slight abdominal distention, and a long, sausage-shaped tumor can be clearly felt, extending from the right iliac fossa upward beneath the free border of the ribs. There is moderate tenderness in the right iliac fossa. There is slight cyanosis of the face.

Operation, June 6, 1895. The abdomen was opened by an oblique incision above the anterior superior spine of the ilium. The peritoneum was not thickened. No general peritonitis. There was a long, hard mass occupying the iliac fossa and extending nearly to the kidney; in this lay the appendix, its tip resting just below the kidney, about it was an abscess containing two ounces of foul pus. The appendix was perforated close to its tip, and was so firmly bound to the underlying fascia that its removal was not attempted. The peritoneal cavity had been protected by pads of gauze previous to opening the mass in which the appendix lay. This opening was made near the edge of the quadratus muscle, the peritoneum being stripped up so as to give access to that region. A lumbar incision was finally made at that point in order to more thoroughly drain the abscess cavity.

The abdominal wound healed in about four weeks, at which time the patient was allowed to be up and about. The lumbar wound healed at the end of seven weeks and the patient was discharged well.

**CASE 29.** Non-perforating appendicitis. Appendix removed. Union of the abdominal wound by first intention.

A woman, thirty years old, was seized with severe pain in the right iliac fossa four days ago. The bowels have not moved since. There is great tenderness at McBurney's point. No abdominal distention and no tumor to be felt. There is slight rigidity of the abdominal muscles of the right side of the abdomen. General condition good. Pulse 100; temperature 99.5° F.

Operation, June 28, 1895. Abdomen opened by an oblique incision through McBurney's point. The peritoneum was not thickened. The appendix was in its normal position. It was thickened and inflamed, and contained three hard fecal concretions. There was a beginning localized peritonitis over a small area of the cecum and adjoining small intestine. There was no pus. The appendix was tied off close to the cecum. The region of the cecum and appendix was cleansed with peroxide of hydrogen, and the abdominal wound was closed tight with a single layer of silk sutures.

Pain ceased at once; the bowels moved spontaneously on the following day; the wound united by first intention, and the patient made an uninterrupted recovery. She was discharged well on the twenty-first day.

CASE 30. Perforating appendicitis. Appendix removed. Abdominal incision. Recovery.

Four days ago the patient, a male aged twenty-six years, was seized with violent pain in the region of the umbilicus; the pain subsequently became localized at McBurney's point. There was no movement of the bowels during the first two days; on the third they moved spontaneously. The general condition is good, the pulse 110, temperature 103° F; there is slight cyanosis of the face and extremities. The abdomen is moderately distended, and there is an ill-defined tumor, which is very tender to touch, in the right iliac fossa.

Operation, June 28, 1895. Oblique incision through McBurney's point. The peritoneum not thickened; no general peritonitis. The cecum, and behind it the appendix, which was very short and perforated by a gangrenous opening one-quarter of an inch from its tip, were bound to the pelvic fascia by firm adhesions. There was no pus. There was no walling off of the peritoneal cavity from this diseased area by inflammatory adhesions. The mesenteric attachment of the appendix was very short. The appendix was tied off with one silk ligature, and removed. The diseased area was thoroughly cleansed with peroxide of hydrogen; drainage tubes were inserted, and the abdominal wound was sutured around them.

On the following day there was no diminution of pain, nor did the bowels move for the next two days. After this day there was no pain, and the bowels' action became regular. The drainage-tubes were removed on the fourteenth day; the wounds healed in four weeks, and the patient was discharged well, July 23d.

CASE 31. Perforating appendicitis. Death.

The patient, a man twenty years old, was seized one week ago with violent abdominal pain, which on the second day became localized in the right iliac fossa. Obstipation and vomiting have been present from the first. On entering the hospital there was great prostration, cold extremities, cyanosis, a thickly coated tongue, weak irregular pulse, and a subnormal temperature. There was no abdominal tumor or localized tenderness.

Operation, July 23, 1895. Oblique incision parallel with Poupart's ligament and two inches above the anterior superior spine of the ilium. Upon opening the abdomen a great quantity of thin, foul-smelling pus flowed out of the abdominal cavity. There was a general peritonitis. The appendix, which was perforated, lay high up toward the kidney, and was bound

firmly to the underlying fascia by dense adhesions; it was separated with difficulty, and tied off close to the cecum. There was a hard fecal concretion lying near the tip of the appendix in the abdominal cavity. The peritoneal cavity was thoroughly washed out with hot sterilized water; large drainage-tubes were inserted and the abdominal wound was closed around them. There was no evidence of any walling off of any part of the abdominal cavity or the pelvis, and both were filled with pus.

The patient's condition at the end of the operation gave but little hope of his recovery, and he died forty-eight hours afterward.

(To be continued.)

## Medical Progress.

### REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D.

#### PURPURA HEMORRHAGICA.

THE following severe type of disease is reported by J. Fayer, Surgeon-Captain of the Royal Horse Guards.<sup>1</sup> The subject was a trooper in the Horse Guards, twenty-four years of age, who had had no previous illness, and had the appearance of a strong, vigorous man, with the exception of some pallor of the lips and conjunctivæ. The attack began suddenly with pain in the right ankle after riding, which was so severe that he had to be carried to the hospital. The joint was found to be considerably swollen, and the skin over it covered with a faint eruption. On the following day both ankles and both knee-joints had become affected, and the temperature had risen to 101°. Two days later the elbows and wrists were also affected, and the patient complained much of soreness of the mouth and gums. During the next four days there was marked improvement, the rheumatic symptoms diminishing greatly, when the right eye and the forehead suddenly became greatly swollen, and four or five purpuric spots appeared on the left thigh. Fresh hemorrhages began to show themselves on the thighs, and pain was complained of over the extensor muscles. The prepuce was enormously swollen, with sero-sanguineous effusion, and the left eye was also affected. Several days later the edema and exudation about the eyes had diminished; but there was great pain and difficulty in swallowing, and the speech was much affected. The tongue and throat were greatly swollen. Suffocation seemed imminent, and preparations were made for tracheotomy, but the urgent symptoms finally passed off under the use of hot fomentations. There were new hemorrhagic areas upon the head and neck, while those upon the thighs were gradually disappearing. The swelling of the mouth and lips persisted, and the skin of the dorsum and sides of the penis sloughed, leaving an open ulcer. Later, more purpuric areas appeared on the body, and numerous sloughs and ulcers were present on the tongue and lips, so that the smell was very offensive. A tendency to cough developed, although no signs were present in the lungs; and during one of the attacks of coughing the patient coughed out a large piece of his tongue, apparently the anterior two-thirds

<sup>1</sup> British Journal of Dermatology, March, 1896.

that had sloughed off. Swallowing again became very difficult, and the coughing was aggravated by the stump of the tongue, over which he had no control, falling back into the pharynx. After this there was a steady improvement, although there was much discomfort from the lesions of the tongue and mouth. There were some further purpuric appearances and a swelling of the ankle. There were no symptoms of lesions of the internal organs during the attack, nor was there any important change in the urine.

#### WARTS ON THE FEET.<sup>3</sup>

Dr. Eddowes read a paper with the above title at a meeting of the Dermatological Society of Great Britain and Ireland, held on March 25, 1896. He had for several years paid especial attention to troubles of the feet, especially those produced by boots and shoes; and in investigating the subject of corns he found they were to be divided into two classes. One was the true corn, consisting of an inverted cone of horny epidermis; the other a more serious condition, a so-called corn, which was really a wart, or a callosity that proved on section to be the covering of a wart.

On looking up the literature of the subject Eddowes could find no mention of this latter condition in any of the text-books, and a recent article by Dubreuilh (to which reference will be made later) was the only writing that considered it. The writer agrees with Dubreuilh as to the clinical aspect of this condition. He has met with a considerable number of callosities under the head of the second metatarsal bone. In an instance under his care such a condition existed in a lady who was subject to gout and who affirmed that when she treated her gouty condition, the so-called corn was not so painful. This Eddowes explains by supposing that the tissues around the bone are more congested during the attacks of gout and hence the wart is made more tender, and liable to greater pressure from a boot. He believes that friction is an important factor in the causation of these warts as well as of those found on the neck, in the axilla, etc. He relates the case of a lady who had a collection of warts around the neck in the form of a necklace, which she attributed to wearing a standing starched collar in the hunting-field. Boots that are too large are apt to aggravate this condition, which is common also in people who turn their toes out too much in walking. Moisture and individual tendency are also factors.

The treatment of these plantar warts recommended by Eddowes is to clean the skin with an antiseptic and then cut or file away the horny layer until the bleeding points of the papillæ are reached. He then cures them with a small spoon with the aid of cocaine, and then applies either the acid nitrate of mercury or the actual cautery. He then covers the wound with a piece of antiseptic plaster and this is held in place by other strips of plaster running around the foot. He thinks that antiseptic precautions are especially necessary in these little operations on the foot, as a death from septicemia has been reported following the cutting of a corn. Treatment is quite satisfactory, as once removed they do not return. In some instances they cause great suffering.

Dubreuilh<sup>4</sup> remarks that plantar warts are not described in surgical or dermatological text-books, although they are far from rare, and cause great dis-

comfort. Local traumatism seems to play an important part in the development of these warts. He has never seen them occur coincidentally with warts of the hands. They are most frequently found at the head of the third metatarsal bone, at a point where we usually find a more or less well-developed callus, sometimes over the head of the first and fifth metatarsal, and upon the heel. No region, however, is exempt. They are usually isolated and few in number, although cases have occurred where the whole foot was covered with them. When the wart has just appeared it presents the appearance of a pea-sized elevation, slightly reddened, and covered with a thin epidermis. When the epidermal covering is removed, the blood is seen to exude by numerous orifices. When the lesion has existed for a longer time it has the appearance of a large callus that is abnormally painful. Sometimes the centre forms a sort of depression, especially if the lesion has been treated. When the lesion is pared with the knife a hard, horny layer is found at the periphery, corresponding to that of which a corn is composed. Instead, however, of penetrating the tissues in the form of a horny cone, this callus presents a soft and depressible central portion. This central portion is made up of columns which penetrate vertically into the tissues, at the apex of which dark hemorrhagic points are frequently seen. As we cut deeper into the lesion, blood oozes out of a great number of capillary orifices with which the surface is studded. These plantar warts are influenced like corns, by changes of temperature, and by the state of the atmosphere. They are much more painful than corns, and may make walking impossible. Superficial paring does not lessen the pain, as the lesion is much larger than it seems to be, and is deeply imbedded in the skin. It is difficult at first to make the curette penetrate into this soft but tenacious tissue. The hemorrhage is considerable, but it is easily stopped by packing the cavity with iodoform gauze.

Curetting is the most radical and effective treatment. It should be done under antiseptic precautions, and followed by a dressing of aseptic cotton. Healing is very rapid.

In a certain number of warts that Dubreuilh studied microscopically, a peculiar structure was observed. No clinical difference could be detected between these and the ordinary cases. Seven cases of this sort were observed, most of which were on the palmar surface of the hand. The peculiarity consisted in the appearance of cavities or vacuoles within the cells. The consequence of this is that the horny layer becomes of a spongy consistency, and more voluminous. Hence the upward growth of the wart is much more rapid, and as the papillæ and vascular canals are much elongated, not being able to extend indefinitely, it often happens that a terminal segment becomes the seat of a thrombosis, and the cells that enveloped this portion of the papilla being no longer nourished, are quickly keratinized.

#### LEPROSY.

Ehlers, of Copenhagen, contributes to the *Dermatologische Zeitschrift* (June, 1896) an article on leprosy, especially in Iceland, which contributes little that is new, but serves to emphasize the belief that is now almost universal, that the disease is contagious and not hereditary. After some excursions into the history of the disease, and references to its appearance in the

<sup>3</sup> British Journal of Dermatology, May, 1896.

<sup>4</sup> Annales de Dermat. et de Syph., May, 1895.

Sandwich Islands, Alicante, Cape Breton, etc., he gives an interesting description of the mode of life of the Icelanders, showing how close crowding and a lack of hygienic conditions, offer a favorable opportunity for its spread. He expresses his disbelief in the theory that the disease is propagated by means of certain kinds of food, such as rancid fats and fish. With regard to the latter food, he shows that it cannot be made answerable for the spread of the disease. It is certainly true, that many peculiar and indigestible varieties of food are eaten in Iceland, and that disturbances of digestion are especially common. Hence it may be inferred that the existence of these affections opens a path for leprosy and other chronic diseases. Ehlers carefully studied 119 cases of the disease and found that 56 patients had had cases of leprosy in the family, and 63 had had none. He raises the question (new, we believe) whether leprosy acquired in matrimony is not more likely to be of the anesthetic type than that acquired under other conditions. He thinks it probable that there are mild and even abortive forms of leprosy, as he has met a large number of cases in Iceland which presented only one or two of the nervous symptoms of leprosy, and concludes from this that the virulence of the disease is on the decline.

With regard to the views of Tambaco Pasha, Ehlers, from what he has seen in Iceland, is inclined to agree with him, as far as the identity of Morvan's disease and the mutilating form of leprosy is concerned. He does not believe that scleroderma is identical with anesthetic leprosy, and in regard to the other diseases which Tambaco wishes to unite to leprosy, such as gangrenous tropho-neuroses and local asphyxia with symmetrical gangrene, he declares himself incompetent to form an opinion. He does not believe in the existence of autochthonal leprosy, but thinks that the existence of leprosy in France is either due to lepers who have survived the abolition of leper asylums for two centuries or to the introduction of the disease by immigrants. It is impossible to prove that a person has never been in contact with a case of leprosy. He points out that the inhabitants of Brittany are in close relationship with the people of Iceland, as 4,000 French fishermen visit yearly the west coast of Iceland, and a large proportion of these are natives of Brittany.

In the same journal (January, 1896) Lassar speaks of the importance of the position to be taken by physicians with regard to the spread of leprosy. He regards the disease as one requiring constant vigilance, as it shows signs of a fresh revival at any moment. In Russia its existence was not especially remarked until it had acquired considerable headway. While in the Sandwich Islands the number of lepers has increased from two to nearly one-tenth of the population, in Norway, where segregation is practised, the cases have diminished in fifty years from more than 3,000, to 700 or 800.

Ten years ago it was believed by some that the disease could be cured by chrysarobin, resorcin, or pyrogallie acid, and many favorable results were reported from the use of these drugs. Many lepers hastened to Europe with the hope of a cure, but it was soon found that although great temporary improvement, and even the disappearance of the lesions could be produced, the disease had not lost its tendency to recur. The writer speaks of the disappearance of the

cases that from time to time visit the large centres with a hope of relief, and the danger to the community that they become wherever they settle. He further alludes to the great difficulties in diagnosis that are often presented to the physician by the uncomplicated and obscure nervous forms and the superficial erythematous eruptions. The presence of bacilli in such cases is, to be sure, a great aid, but not an absolute test, as they may be very few in the earlier stages. He quotes an instance from Goldschmidt of a woman of thirty-six, who was born and had always lived in Madeira, and had no hereditary disease. Six years previously she had come under observation with a well-marked tubercular leprosy, and bacilli were found in the lesions. Five years later every symptom of leprosy had disappeared, and the bacilli could no longer be detected. The patient was treated with a great variety of different preparations, until finally a rigid inunction with five-per-cent. euophen oil was tried. Improvement at once set in, and the lesions and symptoms gradually disappeared. Nothing, of course, can be argued from this single observation, as numerous instances of the disappearance of all traces of the disease are on record. It may be useful, however, to make trial of this method in a larger series of cases. But until it has been shown that leprosy can really be cured, the greatest importance must be attached to the prophylaxis.

#### MERCURY SUBCUTANEOUSLY.

At the meeting of the French Society for Dermatology and Syphilis of January 30, 1896, a number of interesting papers on this subject were presented. M. le Pileur related his experience with intra-muscular injections of gray oil. This method had been introduced into his service at St. Lazare, and he was able to base his conclusions upon 600 cases. He admits that a certain amount of pain is caused by the injections, although not as a rule of sufficient intensity to greatly incommode the patient, or to cause him to refuse the treatment. The pain usually begins about forty-eight hours after the puncture, and is at its height on the third day. Only one abscess was met with, although in a number of cases there was an extensive induration at the site of the puncture. There were no cases of embolism, although in two cases there were attacks of dyspnea immediately after the injections, which the writer is inclined to attribute to hysteria. There was a stomatitis in  $3\frac{1}{2}$  per cent. of the cases. The advantages of this method are enumerated, and accord with those that are commonly cited by the advocates of the subcutaneous method in general. He does not think that the injections are capable of aborting syphilis, but claims that at times most remarkable results are obtained, as, for example, the disappearance of a lip chancre in fifteen days.

Thibierge stated that his later experiences had confirmed his opinion of the value of subcutaneous injections. He considers the insoluble salts preferable to the soluble, because less painful, and because the operation need not be repeated so often. The dangers of the method he considers to have disappeared, since the proper dosage and technique have been determined. Calomel and gray oil are the two preparations that are now most used, and whose claims are most discussed. He regards calomel as more apt to cause stomatitis and more painful than other insoluble salts, but on the other hand, as more rapidly efficacious.

When, therefore, a quick result is imperative, calomel should receive the preference; in other cases, gray oil. He considers that in certain grave cases, and in cases where a speedy diagnosis is needed to decide the question of surgical intervention, the injection of an insoluble salt is demanded. As a general routine treatment it is advisable, although not imperative.

In discussing M. Thibierge's paper, MM. Mauriac and Fournier took a more conservative position with regard to the injections, the former declaring that this method was not necessary in one per cent. of all cases of syphilis, while the latter pointed out the variability of patients with regard to the success of various methods, and emphasized the fact that the injections did not preclude recurrent attacks.

Jullien then spoke of the injections of calomel. His conclusions are that subcutaneous injections of calomel are indicated in the case of any lesions that differ from the ordinary, and of any lesions that prove obstinate, as well as where it is necessary to act quickly on account of danger to important organs. He thinks that there has been a small percentage of recurrences in his cases treated by this method.

#### TREATMENT OF SYPHILIS BY ANIMAL SERUM.<sup>4</sup>

Kollmann, in 1890, was the first to make use of the serum of animals in syphilis, using the serum of sheep, calves, dogs and rabbits, animals that have been proved refractory to the disease. His results were negative, and therefore not published. In 1892 Tomasoli recorded a brilliant success in six cases of recent syphilis, treated by the injection of lamb's serum. Héricourt and Richet have recorded favorable results, while others have been totally unsuccessful.

Experiments were made on twelve patients at Lewin's clinic in the Charité at Berlin, and the results are described in Mueller-Kannberg's paper. The serum was obtained from horses, a source that had never before been made use of in syphilis. As a preliminary trial two patients were given an injection of five cubic centimetres of the serum. Their general condition remained unaltered, but five days later each experienced an attack of urticaria which lasted seventeen days. Another patient treated in the same way developed such grave symptoms that no further trial was made. In the remaining cases no positive influence on the syphilitic process could be claimed. Urticaria was almost universally produced, sometimes of an exceedingly annoying and obstinate type. Some of the patients received at intervals as many as four or five injections without effect upon the disease. The writer remarks, in conclusion, that no encouraging deduction can be drawn from these experiments, which resulted in much the same way as those of Kollmann. The urine in these cases remained normal.

#### BRAZILIAN FRAMBESIA.

Breda<sup>5</sup> has made a careful clinical and bacteriological study of this type of disease from three cases that presented themselves at his clinic in Padua. He speaks first of the great uncertainty and obscurity that surround many of the so-called tropical diseases. Unquestionably many dermatoses that are of common occurrence with us are included in tropical countries under the head of affections of which we have little per-

sonal knowledge. Geber has shown that many common dermatoses are diagnosticated as Aleppo boil, in the East.

It is now pretty well agreed that pian, boubas and frambesia or yaws represent the same chronic contagious disease, which is endemic in tropical countries. It is characterized by its form, its situation on the skin and at the orifices of the mucous cavities, as well as by exuberant tumors which strongly resemble strawberries or raspberries. There has been considerable difficulty in separating this affection from syphilis. The points of variation are the different localization of the two affections, their different course and appearance, the possibility of inoculating syphilis on a person affected with frambesia, and the fact that animals may be inoculated with the latter disease. The cases that formed the subjects of Breda's paper are described as follows:

CASE I. A man of forty-six had lived for five years in Brazil, during which time he acquired torpid, indolent ulcers, chiefly on the legs. He had been employed as a laborer in the fields, and many of his companions were similarly affected. Three young sons of this patient also acquired the disease at the same time. Indolent, elevated fungous ulcers were present on the ala of the nose and on the upper and lower lip. Numerous small, rounded nodules were present on the head and soft palate, which had the appearance of mulberries or raspberries. The tongue, epiglottis and vocal cords were also affected. Ulcers were present on the hands and feet, fingers, toes and penis. No effect was produced on the lesions by any medication, but the wounds healed promptly after surgical measures. The lesions in the larynx continued to extend.

CASE II. A man of thirty-six was affected in September, 1891, on the feet, but the lesions spread upward until a good deal the same condition as that described in Case I resulted. Nodules and infiltrations on the conjunctivæ were a prominent feature. Many of the ulcers healed under the use of iodoform or other powders, while fresh ones appeared in other places. These two cases resembled one another in the following respects: There were indolent ulcers about the nails of the hands and feet. There was a slight enlargement of the spleen, an enlargement of the lymph glands, and a perforation of the membrana tympani in one case, a punctate discoloration in the other. There was no fever, and the other organs were unaffected. The troubles in the mouth and throat produced no symptoms, except some dyspnea at night.

CASE III. A man of thirty-one first developed ulcers upon the ears, thighs and hand. They began as round maculo-vesicular efflorescences. Soon after symptoms appeared in the mouth and throat. This patient was treated with tuberculin, without local reaction. Bacilli were found in numerous sections, situated chiefly in the connective tissue. They were smooth, flattened, straight or only slightly curved, and deeply stained. These bacilli were never found in the substance of the cell.

The following conclusions are reached: (1) Many endemic diseases of the Orient, are called "oriental boil" (*beule des orient*); other endemic skin affections, which are met with in Africa and America must be described under the generic name frambesia. (2) Among the varieties of frambesia, that of boubas does not limit its action to the skin and mucous orifices, but attacks other parts, as the lips, gum, tongue, palate,

<sup>4</sup> Mueller-Kannberg: *Archiv. f. Derm. u. Syph.*, 1896.

<sup>5</sup> *Archiv. für Dermat. u. Syph.*, 1895.

pharynx and larynx. (3) Boubas is not a variety of syphilis or tuberculosis, and has nothing in common with the infectious granulomata, but represents a distinct disease. (4) It is probable that boubas is caused by a specific bacillus, which the writer has observed in numerous sections, both in the skin and mucous membranes, on the surface of the ulcerations and in the lumen of the blood-vessels. This bacillus he proposes to call the "frambesia or boubas bacillus."

## Reports of Societies.

### SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D., SECRETARY.

REGULAR Meeting, Wednesday, March 25, 1896,  
DR. G. H. WASHBURN in the chair.

DR. E. GARCEAU read a paper on

#### RECENT PROGRESS IN BLADDER EXAMINATION.<sup>1</sup>

DR. REYNOLDS: The paper seems to me to cover so many points as to be difficult to discuss. I think that the variety of subjects taken up might well have made several papers rather than one. I have noted a few points which seem to me of sufficient importance to speak of again. I have found that where the pain caused by the introduction of the instrument was not relieved to a degree sufficient to allow the patient to relax by the application of a pledget soaked in cocaine solution to the urethra, the injection of a weak cocaine solution into the connective tissue about the urethra with the hypodermic syringe will sometimes make an operation practically painless. Kelly's latest dilator I dislike very much. It is much more painful than the series of graduated dilators which Kelly first used.

I think that in all work upon the bladder by direct inspection, one learns by experience to distrust very much the appearances which he sees at any single sitting without a good deal of precaution as to the management of the light. In my earlier experience I was puzzled by the fact that lesions came and went, that a portion of the bladder in which I saw a lesion would at the next sitting present an entirely different appearance, sometimes even at different parts of the same sitting. I have learned to vary the light as much as possible backwards and forwards and to be cautious in assuming the existence of any given appearance.

With regard to the use of the ureteral catheters for diagnosis, my experience has not been very great, but it has embraced quite a number of cases, and it has not been nearly as satisfactory as one would judge from Dr. Kelly's writing that the use of the ureteral catheter would be. I have seen one distinct stricture of the ureter which grasped the catheter and had some purulent urine above it. I passed the ureteral catheter in a case of abdominal tumor supposed to be of the kidney, got a specimen of what was supposed to be urine, submitted it to an expert microscopist, had the diagnosis of probable malignant disease of the kidney returned and on operation a large number of gall-stones were found and the kidney was normal. I catheterized two ureters, and got urine which an expert

microscopist assured me was normal from both sides, and a week later I went to operate and was obliged to suspend the operation because she was having what I could not help thinking was a renal colic. That case is as yet undecided. I have, however, diagnosed stone in the kidney satisfactorily in this way.

I have several times succeeded in establishing the normal condition of the kidneys, but I think we must wait some time yet before we can attach the value to the ureteral catheter which some literature would lead us to think it has. I think the ureteral catheters are likely to be useful in difficult hysterectomies. My personal use of them has been limited to one case, in which they proved to be quite unnecessary; but it was pleasant to know where the ureter was, and surprising to see how easily the ureters could be felt with the finger in the abdomen.

The severity of symptoms due to any vesical symptoms is, I think, proportional to the locality and not to the severity. A lesion close to the internal orifice of the urethra will cause more symptoms than a large amount of trouble at a distance.

I am a little puzzled by the term hyperemia. In any new subject such as this it is difficult to know exactly what terms mean. If hyperemia means a general congestion of the bladder or of the trigonal region, I am inclined to believe it an affection that had better be let alone locally, that is, dependent on other pelvic conditions. One German authority has reported such a congestion reaching the point of forming blebs. A French authority has spoken of apparently the same condition under the term hyperemia. Personally, I think these cases better be treated by attention to the other pelvic disease, but I have seen, in a great many cases, localized patches where the bladder surface has apparently lost its epithelium in small localized patches surrounded by congestion; and when I can find one of those roughened patches in the middle of a congested area, I have so far never failed to see the mucous membrane return to a normal condition. I think the application of a two-per-cent. to four-per-cent. solution of nitrate of silver is worse than wasting time. I fuse a bead of nitrate of silver on the end of a wire, which when touched to the small spot in the centre creates next to no reaction and results in the cicatrization of that spot and in the disappearance of the congestion around it, in my experience almost with certainty.

I am very much surprised to hear that fifty per cent. of all gynecological patients need the catheter, and at the great frequency of vesical irritation after operation. I may have failed to notice this condition. As to the use of the catheter, I am sure that I do not use it after even five per cent. of operative cases.

I should hardly feel willing to say that the term, functional disease of the bladder, must be abandoned, although I agree it has been narrowed by the use of the cystoscope. I do think that it is a safe principle to say that in almost all cases of vesical irritability inspection of the bladder will, if carefully enough done, show some direct alteration of the vesical mucous membrane or an inflammation of the ureter. That I think is a very frequent thing, rarely recognized, easy to recognize if one takes the trouble, and a frequent cause of vesical symptoms, of irritability and difficulty in urination, and of pain with the full bladder, and one that causes most aggravating symptoms when it is present.

<sup>1</sup> See page 256 of the Journal.



DR. CHADWICK: It is hard, as Dr. Reynolds says, to speak on this paper because it covers so much ground. One or two points I noted in which my experience has perhaps differed a little from that recorded. In the first place, I noticed that the emptying of the bladder was attributed to a contraction of its muscular walls. I have long thought that that was a mistake as regards the normal bladder. The normal bladder when it is empty is not contracted, but collapsed. As urine flows into it the bladder fills from a collapsed condition, not a contracted condition, up to a certain point when distention causes a pull on the sphincter which by reflex action evokes peristalsis, just as it does in the rest of the genito-urinary tract, that is, in the ureters, and in the intestines conspicuously, and in the genital tract. Peristalsis of the Fallopian tube, when violent, we know as tubal colic; contraction of the uterus, when the uterine body is not distended, we call colic, when distended we call it uterine contractions. When the bladder fills to a certain extent this peristalsis is set up, but it does not go on, its cavity is obliterated by active contraction, it simply collapses from the pressure of the intra-abdominal tension. To prove this you have merely to insert a catheter into the bladder when it is full and you will find that as the bladder empties, the catheter is not arrested when pushed forward, but it can be pushed in one direction or in another showing that the walls of the bladder are not contracted, but collapsed. When, however, you have an inflamed bladder then it often contracts actively to a pear-shape body lying between the pubic bone and the uterus.

I have not had experience with Dr. Kelly's instruments. I have the greatest admiration for the advance they make. I cannot say I think the treatment has kept pace with the diagnosis. The result of all bladder treatment is pretty unsatisfactory. I get the best results not from local treatment, but from treating the urine. I do not believe there is anything that relieves the bladder so quickly as by rendering the urine alkaline when it is overacid, and it seems to me in a large number of cases there is a decided effect upon the bladder of benzoic acid. I find that, as I have passed from hospital and dispensary work to private practice, I have gradually renounced the greater part of my local treatment of the bladder and urethra and find that by giving women rest, fresh air, taking them away from work and worry, diluting the urine, and occasionally washing out the bladder with boracic-acid solution or permanganate of potash that nine out of ten get well. I do not get the worst cases because I am not doing dispensary and hospital work. The ordinary irritable bladder, moderate inflammation of the bladder, can generally be cured without touching the bladder, which statement I want to emphasize very strongly. Strangely enough I am protesting against the same fault that I committed in my youth. I began with my idea of what I had seen in dispensaries and hospitals abroad and in this country, that is, local treatment of the bladder. I used to dilate the urethra, pass in nitrate of silver and sweep it round the sphincter blindly, and I caused a great deal of pain, cured some patients, some I did not. But I do not find it necessary to do it now, and I would urge upon you all in your enthusiasm for following out this more perfect and exact method of diagnosis which I accept fully as a brilliant achievement, not to think it has got to be used in every case. Try first if you cannot re-

lieve a woman without subjecting her to the discomfort of these examinations on the knees and elbows, in many instances very painful. To-day a patient came to me who had been under Dr. Kelly, and said she never suffered such torture in her life as being subjected to his treatment for five weeks. She was not a nervous woman, but said her nervous system was shattered by it. She was very much benefited as to the bladder symptoms. They returned, however, and she is now suffering as much as ever. What I said about treating the bladder locally applies also to the urethra. I am surprised how rarely I find anything the matter with the urethra. Occasionally the urethral glands will get inflamed and cause pain. Occasionally there is a painful urethral caruncle, yet you rarely find anything there to need local treatment. I want it understood fully that I accept this new treatment as a great advance in a limited number of cases. I only want to call halt, and that the more simple and the less painful methods may be tried before we adopt this new method universally.

DR. ENGLEMAN: I regret that I did not hear the first part of the paper in which Dr. Garceau probably spoke of the methods of examination, but I will at least congratulate him upon the unprejudiced manner in which he has detailed his work and his results, remembering that this subject is still *sub judice* with enthusiastic advocates and unyielding opponents. We are still feeling our way and it is only by disappointments and failures that we will be enabled to arrive at satisfactory conclusions and differentiate the cases before us; I am convinced that we will find many in which these methods of examination and treatment will lead to decidedly beneficial results. Unquestionably cystoscope and probe are now resorted to experimentally and in cases where other means have failed, but I believe that we are as yet certain of comparatively few conditions in which we can look to this local inspection and treatment with a fair probability of success. In the large majority of cases it is true that by the various methods which have been suggested, constitutional treatment, correction of the character of the urine, and above all the management of the surrounding organs upon which these conditions so often depend will lead to the desired result; so, also, if surgical lesions appear in which the diagnosis is fairly clear we may expect relief from operative procedures; such as compression of the ureter due to inflammatory deposits and to neoplasms. One of the first cases in which I attempted exploration of the ureter was of this kind. The diagnosis appeared fairly clear before. It was simply made positive by seeing the narrowing due to inflammatory deposits in the pelvis and of course no local treatment was of benefit. It was the treatment of the existing pelvic condition, absorption of the products. In another case which I had seen at an earlier day it might have led to admirable results. That was one of the few cases of intermittent hydronephrosis which came under my observation, in which the most agonizing suffering was caused for a few days at a time by an accumulation in the pelvis of the kidney, due, I presume, to a kink in the ureter of the displaced organ; a condition which might possibly have been relieved by the catheter.

Like Dr. Reynolds I was astonished to hear of the vesical disturbance which followed, as described by the author, as in my experience this has rarely been sufficiently annoying to demand attention. It depends



very much upon the method of operation, for instance, upward pressure by an anterior retractor will affect bladder and urethra, dragging upon the tissues. Compression, bruising, irritation by antiseptics, may be followed by relaxation or congestion which will necessitate the use of the catheter; but in the large majority of my own cases I do not recall such troubles. Of course the cases recorded by Dr. Garceau were observed in every detail and the slightest disturbances were noted which would ordinarily pass unheeded and certainly would not demand the catheter.

We undoubtedly have something to expect from a careful inspection of the bladder, but in private practice we will have to be extremely cautious and must for the present leave these investigations to the enthusiastic workers with large clinical material who will in time point out to us the class of cases which must be treated in this way, and those men will meet with a large number of unsatisfactory cases before definite results will be obtained. In certain conditions a differential diagnosis can be made by the cystoscope with certainty which we approximately make by our general methods of examination as hitherto practised, and even if the results have not been so striking as the more enthusiastic advocates of the cystoscope would wish us to believe, we certainly may look for progress in that field and will ere long be able to establish more definite indications for such examination and local application of remedies, which will enable us to relieve more readily these often tedious and annoying troubles. For the present I do not feel warranted in resorting to these methods until other means have been tried unless the symptoms point to circumscribed lesions which can thus be made visible and amenable to direct treatment.

**DR. GARCEAU:** The most interesting point in connection with the study of these cases is the frequency of vesical irritability in women with pelvic disease. It was found that fully three-quarters of the women were either suffering from this irritability or had at some previous time suffered from it. The amount of inconvenience varied, at times it was so slight as to occasion no special suffering, increased frequency being the symptoms; at times, however, when associated with dysuria the suffering was extreme, especially when the urine had to be voided every ten or fifteen minutes. Quite often the women did not mention their trouble with the bladder, having come to look upon it as a habit, so to speak. This explains the high percentage. Bladder examinations with the cystoscope were not made for obvious reasons; but from a study of analogous cases the trouble is no doubt due to a pelvic congestion.

In regard to the treatment, local applications in my experience, have been beneficial and relieve. The term hyperemia explains the condition fairly well, for the condition is one of congestion rather than actual inflammation.

**AN ACT OF FORTITUDE.**—It is stated that the actor recently stabbed on the stage in London retained sufficient command over himself after the infliction of the fatal wound to answer a question put to him, and also to allow the curtain to be raised for a short time. And this in spite of the fact that the stab wound had penetrated the border of the lung, and passed into the pericardium and aorta.

## AMERICAN ORTHOPEDIC ASSOCIATION.

TENTH ANNUAL MEETING, BUFFALO, MAY 19-21, 1896.

### FIRST DAY.

#### THE RATIONALE OF GYMNASTIC EXERCISE AND PRESSURE CORRECTION IN THE TREATMENT OF SCOLIOSIS.

**DR. L. A. WEIGEL**, of Rochester, read a paper with this title, and summarized his views as follows:

- (1) Gymnastic exercise as an exclusive method of treatment must be limited to the very early stages, and to deformities which are postural, pure and simple.
- (2) Exercises of all kinds are insufficient, even in comparatively mild cases.
- (3) Treatment by mobilizing the spine should precede any attempt to develop the muscles.
- (4) Removal of the superincumbent weight is the important part of the treatment, and is of great value in sustaining the effects of exercise.
- (5) Over-development is to be avoided.
- (6) Empiricism should have no part in the treatment of scoliosis.

#### THE RAPID CURE OF ROTARY LATERAL CURVATURE OF THE SPINE, AND OTHER POSTURAL DEFORMITIES, BY MEANS OF THOROUGH DEVELOPMENT, AND CORRECTIVE EXERCISES WITH HEAVY WEIGHTS.

**DR. JACOB TESCHNER**, of New York, present by invitation, read a paper on this subject, and gave a demonstration of the method of carrying out these exercises. According to his view of lateral curvature, it was due to general muscular weakness and habitual faulty position, and hence the whole muscular system should be developed. At each visit, the patient is put to his individual limit, and it is found that this usually increases at each visit. He claimed that by this method he had succeeded in curing cases of lateral curvature in which there were bony and ligamentous changes, and marked rotation present. In the milder cases, improvement was quite noticeable within two weeks, and a cure would often be effected in three months. He said that out of 21 cases treated by him according to this method, 19 had been cured, and two had been very much improved at the time the treatment had been discontinued. The advantages claimed for the treatment were:

- (1) The improvement in the general health and in muscular development.
- (2) A marked increase in the lung capacity.
- (3) A slower and more forcible heart action.
- (4) That long after the cessation of the treatment, an improvement was noted in the muscular system and in the general health.

**DR. S. KETCH**, of New York, in opening the discussion on the foregoing papers, said he agreed with Dr. Weigel, except that he would attribute some benefit to will power. Regarding Dr. Teschner's paper, he would say that he was not yet convinced that it was necessary, or even advisable, to subject children and adolescents to such a severe course of gymnastics—indeed, he believed that the cases cured by this method could be treated with equal success by other and safer means. It was not difficult to secure an improvement in cases of lateral curvature by correcting the postural curves, but the only test of marked benefit or of cure, was the amelioration of the element of

rotation. In his opinion, it was important to increase, and to maintain the lateral flexibility of the spine, and hence he would look upon the best method of treating lateral curvature of the spine, as that one which combined the use of mild gymnastic exercises and the application of retentive apparatus.

DR. JOHN RIDLON, of Chicago, said that he had tried these heavy exercises on only one patient, a girl of sixteen. This girl became greatly fatigued after making ten or fifteen movements with dumb-bells weighing one and a-half pounds, and it was impossible to get her to put up a five-pound bell more than five times. As there was no visible improvement in the case after four or five weeks of this exercise, he had abandoned further trial of the method.

The speaker then proceeded to criticise the incomplete and inaccurate photographic records presented by Dr. Teschner, objecting particularly to the absence of photographs of *cured* cases, and also of the best position the patient could be made to assume prior to the treatment. Without these, he said, it was impossible to judge of the merits of the method.

DR. REGINALD H. SAYRE, of New York, said that he could not accept the statement that development of one part of the muscular system must necessarily be at the expense of the remaining portion. In his opinion, there were many cases of lateral curvature which could not be well treated without mechanical appliances. If it were a fact that bone changes could be made to disappear by muscular exercise alone, it was a certainly novel and wonderful scientific fact. Until indisputable evidence to this fact were forthcoming, he could not but be in doubt regarding the kind of cure meant. Nor could he accept the statement that the improvement in muscular development continued after cessation of the exercises, for this was at variance with general principles.

DR. A. J. STEELE, of St. Louis, said that he thought there was enough in Dr. Teschner's method to justify him in continuing his work along this line. He could not agree with Dr. Weigel that the spine could not be rendered flexible by means of jackets and similar appliances.

DR. HARRY M. SHERMAN, of San Francisco, said that while he agreed with those who considered the superincumbent weight the chief etiological factor, he could not but wonder why any bone in the body should be abnormally weak, unless, possibly, as a result of rickets in early life. He endorsed the use of mirrors as an aid to the proper performance of gymnastic exercises.

DR. A. E. HOADLEY, of Chicago, said he considered the prime etiological factor to be "cellular tension" or debility. Such a condition, when present in the intervertebral cartilages, may result in marked shortening of the stature. He had known this to amount to as much as one and one-eighth inches between the time of rising and going to bed at night. When shortening exceeded half an inch, deformity was invited.

DR. W. E. WIRT, of Cleveland, said that he agreed with Dr. Teschner regarding the increased flexibility of the spine produced by these heavy exercises, but he thought it was a mistake to pin one's faith on one method of treatment exclusively.

DR. HANNA, of Oberlin College, said that in the treatment of cases of lateral curvature she preferred massage to forcible manipulation, together with the use of the hot and cold douche.

DR. WEIGEL said that he did not believe that the disadvantages of mechanical supports were as great as had been claimed. He could not believe, as Dr. Terschner had stated, that the muscular strength was increased from visit to visit by the heavy gymnastics.

DR. TESCHNER, in closing the discussion, said he admitted the inaccuracies of his records, as of all known methods of recording such cases, but they were the best obtainable under the circumstances. He had made no attempt to pose his patients for their photographs.

#### SPONTANEOUS DISLOCATION OF THE HIP.

DR. WM. J. TAYLOR, of Philadelphia, reported a case of spontaneous dislocation which had evidently occurred about six months after a fall. The history clearly indicated that it was not a case in which the dislocation had been produced by the injury, and had been merely overlooked. As the dislocation had existed for fifteen years before coming under his observation, no attempt had been made to dislodge the head of the femur from its position on the dorsum of the ilium.

DR. R. H. SAYRE, GOLDTHWAIT and RIDLON reported similar cases.

#### THE ANTERIOR TRANSVERSE ARCH OF THE FOOT.

DR. JOEL E. GOLDTHWAIT, of Boston, said that the cases of abnormality of the anterior transverse arch of the foot might be divided into two groups:

(1) The relaxed form.

(2) The rigid type with distinct bony change. The patients stated that the foot was becoming wider, and examination showed a callosity under the head of the second, third or fourth metatarsal bone. The speaker thought that improper shoeing was largely responsible for the condition.

In the treatment of the relaxed cases, it was most important to strengthen the front part of the foot by appropriate balancing exercises, and to relieve the strain on the ligaments and muscles by the application of a snugly fitting bandage just behind the head of the first metatarsal bone. Immediate relief would follow the application of a pad of felt so as to make pressure just back of the heads of the second and third metatarsal bones.

DR. KETCH referred to a case in which the gouty diathesis, rather than bad shoeing, had caused the condition.

DR. E. H. BRADFORD said that by means of the rubber bandage and felt pads he had relieved many cases. He had seen no case of true metatarsalgia in which the second metatarsal bone was depressed; they had all been in cases in which the trouble was in the fourth metatarsal bone.

DR. J. E. MOORE, of Minneapolis, said that he had met with this condition most commonly among nurses. His treatment had been successfully carried out along the lines recommended in the paper.

DR. KERR, of Washington, D. C., said he had also found metatarsalgia associated with depression of the fourth metatarsal bone, and had relieved the pain and disability by excision of the metatarsal joint, and sometimes also of the nerve.

The PRESIDENT called attention to the fact that a proper shoe should be made so that the toes do not point upward, as they did in the ordinary shoe.

DR. GOLDTHWAIT, in closing, said that undoubtedly

the chief cause was bad shoeing. In some cases there had been pain at the head of the fourth metatarsal bone, and in others between the second and third metatarsals.

#### THE PRESIDENT'S ADDRESS.

DR. ROYAL WHITMAN, of New York, President of the Association, delivered an address on

#### THE DEFINITION AND SCOPE OF ORTHOPEDIC SURGERY.

The following definition was suggested: "Orthopedic Surgery is that division of surgery which treats of disabilities and diseases of the locomotive apparatus, and of the prevention and treatment of the deformities of the framework of the body."

#### INVESTIGATIONS ON FLAT-FOOT.

DR. E. H. BRADFORD, of Boston, by means of lantern slides, showed the development and causation of flat-foot. These photographs compared the weak feet of shoe-wearing people with the strong feet of those who were accustomed to go about without shoes.

DR. WHITMAN commented upon the evident advance that had been made in the last decade in the knowledge and therapeutics of this subject.

#### SECOND DAY.

#### THE TREATMENT OF ABSCESS IN HIGH DORSAL CARIES.

DR. E. H. BRADFORD, of Boston, in a paper with this title, advocated operation and drainage of the abscess. This operation should be begun by cutting down upon the tip of the transverse process, and resecting a portion of rib, after the manner of an operation for empyema. There was less danger to the heart and large blood-vessels if the incision were made on the right side.

DR. R. H. SAYRE said that Dr. Schafer, of Chicago, in some cases of this kind, had passed in a probe and cut down upon it, and had then established thorough drainage from one side to the other.

DR. SHERMAN said that he had done the operation on a case in which the abscess had perforated an intercostal space and produced an accumulation under the skin. The diagnosis was comparatively easy if the way were made plain by the burrowing of the abscess between the ribs.

DR. KETCH referred to a case of very sudden death in a child suffering from disease of the second and third cervical vertebra. Although no autopsy could be obtained, it seemed fairly certain that death had been due to the direct pressure upon the respiratory centre.

DR. GOLDTHWAIT said he had seen the suddenly fatal case which had formed the text for Dr. Bradford's remarks. The cause of the sudden death remained unexplained, for the autopsy showed that the abscess had not ruptured, and there was no evidence of pressure on the spinal cord.

DR. BRADFORD, in closing the discussion, said that where there was disease of the axis and atlas, there was danger of direct pressure upon the respiratory centre, but where the disease was lower down, and was associated with suffocative symptoms, it was fair to conclude that an abscess was present. The operation which he had advocated, was certainly a grave one, but it was intended to meet a grave emergency.

#### SUPPURATION IN JOINT AND SPINAL DISEASE, AND ITS RELATION TO TUBERCULAR MENINGITIS: AN ANALYTICAL STUDY.

DR. SAMUEL KETCH read a paper with this title.

DR. J. E. MOORE said he thought it might be safely concluded that the formation of tubercular abscesses did not play a very important part in the development of tubercular meningitis. The evidence in the paper would also seem to point to the fact that operative measures were much less likely to cause tubercular meningitis or general tuberculosis than had been supposed.

DR. A. M. PHELPS said he did not think it was possible for true suppuration to produce a tubercular lesion.

DR. GOLDTHWAIT said that his cases of tubercular meningitis had given only the clinical evidence of this disease, but in every instance the autopsy had disclosed an acute general miliary tuberculosis.

#### A CLINICAL STUDY OF IODOFORM GLYCERINE IN TUBERCULOUS OSTEOMYELITIS.

DR. HARRY M. SHERMAN, of San Francisco, read a paper on this subject, based on a carefully recorded experience in 20 cases, 15 of which were cases of hip disease, two of knee-joint and two of ankle-joint disease, and one of disease of the elbow. In all, 164 injections were made. About half of those were intra-articular, and the other half were intra-osseous injections of a ten-per-cent. solution of iodoform in glycerine. In no case was there any iodoform poisoning, or was the injection the cause of suppuration. The action of the injections was, in most instances, disappointing. In no case was the orthopedic treatment interrupted.

DR. ROSWELL PARK, of Buffalo, said that he had made an extensive trial of the intra-articular injections of iodoform, but had not seen much benefit from their use. In two cases, coming to excision, the iodoform was found packed into a mass which acted as a foreign body. He had made some culture experiments with iodoform, and these had demonstrated that the germicidal power of iodoform was very feeble.

DR. J. E. MOORE said that he, too, had met with nothing but disappointment from the iodoform injections, except in the treatment of psoas abscesses. Here, he thought they had been of some benefit.

DR. HENRY LING TAYLOR, of New York, said that although iodoform had proved disappointing when injected into diseased joints, he thought a solution of iodoform in ether was a valuable injection for sinuses.

DR. PARK said that as the germicidal action of iodoform was claimed to be due to the liberation of free iodine, he proposed to study the effects of injections of iodine and glycerine.

DR. JOHN RIDLON said that a sharp distinction should be made between cases treated by protective apparatus in conjunction with iodoform injections, and those in which only the injections were used. He had treated about 30 cases by the intra-articular injections. About one-third had showed improvement; another third had remained stationary; and the others appeared to have been made worse by the treatment.

DR. A. M. PHELPS, of New York, said that he had used the injections of iodoform with negative results. Iodoform and glycerine were useful in tubercular

abscesses, partly because of the hygroscopic nature of the glycerine.

**FURTHER OBSERVATIONS ON THE USE OF HYDROCHLORIC ACID IN BONE NECROSIS OF TUBERCULAR ORIGIN, WITH REPORT OF CASES.**

DR. JEROME HILTON WATERMAN, of Buffalo, reported his experience in the treatment of tubercular bone necrosis by means of injections of strong hydrochloric acid. The injections were usually made twice a week. His experience was, on the whole, favorable to the method.

DR. W. R. TOWNSEND said that he had observed good results from this treatment, particularly where the necrosis was superficial.

DR. A. E. HOADLEY, of Chicago, said that the application of a five-per-cent. solution of hydrochloric acid was sufficient to quickly decalcify the bone without destroying other tissues.

DR. SHERMAN said that as the chief seat of disease was the granulation tissue in the bone, it would seem to him that the use of the sharp spoon would be more effective.

DR. WATERMAN, in closing, said that the treatment was at times quite slow. He would advise the use of a local anesthetic in conjunction with the acid applications.

**THE USE OF DRY HEAT OF HIGH TEMPERATURE IN THE TREATMENT OF CHRONIC JOINT AFFECTIONS.**

DR. WM. E. WIRT, of Cleveland, described the apparatus which he employed. It consists of a copper drum twelve inches long and nine inches in diameter, fitted at each end with a wooden ring and a hood of thick rubber. Having protected the back of the knee with cotton, it is enclosed in the apparatus, and heat applied to the outside by means of a Bunsen burner. Most patients would tolerate a temperature between 250° and 300° F., provided three holes were made in the drum to secure proper ventilation and so keep the air dry. This treatment gives an immediate relief to pain and increases temporarily the mobility of the joint.

**DIVISION OF THE HAMSTRING TENDONS BY THE OPEN METHOD FOR CORRECTING MALPOSITION AND SECURING REST IN TUBERCULAR DISEASE OF THE KNEE.**

DR. BERNARD BARTOW, of Buffalo, in a paper with this title, contended that division of the hamstrings gave quicker relief and secured better rest than did old mechanical appliances, and that it cut short the inflammatory process. The operation should be done by open incision.

DR. WIRT thought it was rare that mechanical means would fail to straighten these cases.

DR. R. H. SAYRE said that the operation might be occasionally demanded, but whenever possible the straightening should be accomplished by mechanical treatment alone.

DR. B. E. MCKENZIE, of Toronto, said that he considered the method unjustifiable until after mechanical treatment had failed, and in his experience mechanical means had never failed under such circumstances. The patients just exhibited should not be allowed to go around without better protection of the joint.

DR. JOHN RIDLON, of Chicago, was very positive that any joint still diseases could be straightened with

out operation. He was accustomed to use some form of a Thomas brace. In cases in which the greater part of the rigidity appeared to be due to fibrous adhesions and muscular shortening, without evidence of acute inflammation, he would straighten the limb by manual force applied under anesthesia.

DR. W. E. WIRT, as an example of what could be accomplished by mechanical means alone, referred to a recent case which had been pronounced by several surgeons to be one of bony ankylosis, yet he had succeeded by mechanical measures alone in straightening the limb in two months.

DR. BARTOW, in closing, said that to insure safety and thoroughness the operation of dividing the hamstrings should be done through an open incision. In the cases that he had treated by the method described in the paper he knew of no other alternative than excision; hence he considered the division of the hamstrings perfectly justifiable. The method was only intended as one means of accomplishing an end.

(To be continued.)

## Recent Literature.

*Diagnosis and Treatment of Diseases of the Rectum, Anus, and Contiguous Textures.* Designed for Practitioners and Students. By S. G. GANT, M.D., Professor of Diseases of the Rectum and Anus, University and Woman's Medical Colleges; Lecturer on Intestinal Diseases in the Scarritt Training-School for Nurses; member of the American Medical Association, National Association of Railway Surgeons, etc. With two chapters on "Cancer" and "Colotomy," by HERBERT WILLIAM ALLINGHAM, F.R.C.S. Eng., Surgeon to the Great Northern Hospital; Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum; Surgical Tutor to St. George's Hospital, etc., London. Illustrated with 16 full-page chromo-lithographic plates and 115 wood-engravings in the text. Philadelphia: The F. A. Davis Co., Publishers. 1896.

This work upon Diseases of the Rectum starts with a brief chapter upon the "Anatomy and Physiology of the Rectum and Anus," followed by "Symptomatology" and "Examination of the Rectum and Anus." Then follow practically all of the diseases of the rectum and anus. There are added two chapters which are of especial interest: one on "Railroading as an Etiological Factor in Rectal Disease," and one on "Auto-infection from the Intestinal Canal." Two of the chapters by Herbert William Allingham, F.R.C.S. Eng., one on "Cancer" and the other on "Colotomy," add greatly to the value of the book.

The book is illustrated by a number of chromo-lithographs and by a number of cuts, the majority of which are good, a few poor. The book, as a whole, is conveniently arranged for reference, and presents the subject with which it deals in a thoroughly intelligent manner.

*Formulaire Aide-Mémoire de la Faculté de Médecine et des Médecins des Hôpitaux de Paris.* Par le Dr. FERNAND ROUX. Quatrième édition. Paris: G. Steinheil. 1896.

A fourth edition of this little book within six years attests its compact usefulness. The arrangement is simple and there are a number of good prescriptions.

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**TRAINED NURSES.**

THE *British Medical Journal* for August 22d publishes in its correspondence columns a letter from a nurse in a large general hospital, which is of considerable practical interest and importance in the present state of trained nursing. She says in part:

"We are exceedingly glad that public notice is being turned to the present condition of hospital nurses, which is just now in a transition state and certainly needs reorganizing. Public committees still require of us all the menial ward work which uneducated nurses of former times used to do, not knowing, perhaps, that the medical staff who instruct us after our long day on duty exact of us ever more intelligent work, and an almost military smartness and discipline. All this, with the needs of the sick, the bad air of the wards, and the sad sights therein makes the three years' hospital training so great a strain that a nurse's health suffers, and is in some cases impaired for life. But this state of affairs ought not to continue. There should be three sets of nurses, each working eight hours, as there are at King's College Hospital, London, and in some American hospitals; then we could have lectures on all the branches of our profession, with practical experience, and our hospitals would become first-rate training-schools. Let the ward work be done by illiterate ward maids — and the nursing would be more thorough in consequence. Although our hours on duty are much too long, we often have not time to do both well. Legislation has stopped factory girls from working more than nine hours a day, with Saturday afternoon and Sunday free. Our days all the year round are twelve to twelve hours and a half, the work being hard and often depressing."

Unquestionably, the above statements involve a real problem, which will soon come to demand some sort of a solution. It is really a question of education. The correspondent is right in saying that more and more intelligent work is being exacted from the trained nurse, while certainly in many hospitals she is still required to do the menial work of the wards. There is a certain incongruity in noting at one moment changes in pulse or temperature or general physical condition in the patient under her charge, and at the next attending to work which any absolutely untrained person could equally well perform. In other words, the nurse, through her training and lectures, is coming to look with disfavor on work which a few years ago would have been called the essence of nursing,

and finds herself now in a position almost of assistant to the physician in charge.

The questions involved in the evolution of the trained nurse are worthy of much serious consideration. It is entirely natural that the intelligent women who make up so large a proportion of our various training-schools should continually thirst for more knowledge, and as a natural result find much of the mechanical work which they have been hitherto called upon to do rather beneath their dignity and capacity. The skilled nurse recognizes her value to the community at large, and particularly to the physician with whom she may happen temporarily to be associated; and the physician is rapidly becoming more and more dependent upon his nurse actually in the treatment of his case. His attitude is becoming that of adviser and director, but he is infinitely less capable, as a rule, of actually caring for his patient as his forefathers would have done, than is his skilled nurse. The importance of nursing is unquestioned in many of the ills to which men are subject, and as its importance grows and its scope widens we can no longer expect of the nurse the amount of mere work which hitherto has fallen to her lot.

Just what the ultimate outcome is to be, however, is not easy to predict. The so-called menial portion of nursing will remain essential, and the question will naturally arise as to who is to do it. The correspondent in the *British Medical Journal* suggests that "the ward work be done by illiterate ward maids, thereby making the nursing more thorough." Exactly what the writer may mean by ward-work we do not know, if sweeping floors and cleaning paint, she is certainly justified in her remonstrance. Again, in another part of her letter she speaks of "menial ward work which uneducated nurses of former times used to do." From this and the general tone of the letter we conclude that she, at least, has come to look upon nursing as a profession whose dignity is infringed somewhat by so-called "menial work."

All this involves certain questions of decided practical importance. What is to be the outcome of our training-schools? Is there not danger that instead of making good nurses we may be encouraging a school of poor physicians, who lack only the title of Doctor? Are the numerous lectures now everywhere given to nurses conducive to their best training as nurses? Is not a little knowledge just here a dangerous thing? What limits are to be set to their medical education?

The skilled nurse of the present day marks an interesting transitional type. She is far too clever and intelligent to look upon the menial work of her office as a satisfactory end in life. She is ambitious to know, not only that her patient is more or less ill, but just how and why and where he is ill. She has the cravings of a physician, without the means of gratifying her cravings. All this is commendable, but is it a part of the qualifications of a nurse, as such?

Not long since it was suggested to us by a fellow-

physician, that the outcome of the whole matter might be, that the highly-trained physician of scientific bent who chafes at the irksomeness of the details of practice would stand to the community in the constant attitude of a consultant, while the nurses as then constituted would play the part of family doctor.

The prophecy may reach fulfilment, for all things are possible in a shifting state of society. In the meantime, however, certain questions concerning the training of nurses are pressing for solution.

#### INCREASED INEBRIETY UNDER THE RAINES LAW.

THE statistics of the alcoholic wards of Bellevue Hospital, which is the only institution in the city of New York where patients suffering from alcoholism are admitted, go to show that since the famous Raines Liquor Law, which was passed at the last session of the Legislature, went into effect, there has been a marked increase of drunkenness in the community. From the first day of July — when the law went into force — until the twentieth day of August, 649 cases of alcoholism were treated in the men's division alone, against 400 cases for the corresponding period of the year 1895 — a gross increase of 249 cases for the 51 days included within the dates mentioned, and an average increase of five cases per diem.

The Raines law was framed ostensibly, not only to exterminate the small rum-shops, but to render operative the Sunday-closing law. It is already notorious how signally it has failed in effecting the latter purpose. Liquor is now sold openly on Sundays, with a deleterious effect upon the morals of the people that is clearly indicated in the records of the alcoholic pavilion at Bellevue.

Under the old law it was on Sunday that the greatest number of patients were received there each week. Now it is on Monday that the largest number is received. On the Mondays of the period above mentioned in 1895, the number of admissions was 48, while on the Mondays of the same period in 1896 they amounted to 98, or, were more than doubled. From these figures it can readily be seen that there is far more drinking on Sundays than was formerly the case. Under the old law it was customary for men addicted to inebriation to indulge in a drinking bout on Saturday night, after receiving their week's wages, and to recuperate from the effects of their debauch on Sunday, so as to be able to return to work on Monday in a comparatively capable condition. Now, however, it would seem, a large proportion of this class continue to drink during Sunday in the Raines "hotels" (which remain legally open at all hours), and on Monday are consequently totally incapacitated for work. A certain percentage of them find their way into Bellevue, and their condition, after two successive days of drinking, is naturally much more deplorable than formerly when it was customary with them to terminate their spree on Saturday night.

#### MEDICAL NOTES.

**ROME AS A MALARIAL CENTRE.** — Rome is fast ceasing to be a malarial centre, according to the *Medical Press*. The population of the city is about 467,000, and the number of deaths from this disease has decreased from 650 in 1881, to 125 in 1895.

**PROFESSOR BEHRING'S RESIGNATION.** — Professor Behring is about to resign his chair (hygiene) at the University of Marburg, in order to devote himself exclusively to scientific research. Wernicke will probably succeed him. — *Journal of American Medical Association*.

**PREVENTIVE INOCULATION OF DOGS.** — It has been seriously suggested that hydrophobia might be exterminated by prophylactic inoculations. Certain experimental researches have been undertaken by M. Pourtales and Professor Jolyet with this end in view, but the work has apparently attracted but scant attention, no doubt due to the combined facts, that hydrophobia is relatively an unusual disease, and that the practical difficulties in the way of anything approaching universal inoculations would be too great to be overcome. Vaccination is sufficiently difficult to carry out thoroughly, but how much greater would be the difficulty in the case of the whole canine population!

#### BOSTON.

**ACUTE INFECTIOUS DISEASES IN BOSTON.** — For the two weeks ending at noon, September 9, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 55, scarlet fever 14, measles 46, typhoid fever 52.

#### NEW YORK.

**A UNIQUE CASE OF CÆSAREAN SECTION.** — A case of Cæsarean section which is probably altogether unique occurred at the 125th Street station of the Third Avenue elevated railroad on September 8d. A young unmarried woman, a native of Finland, who was in the seventh month of pregnancy, committed suicide, probably on account of shame for her unfortunate condition, by throwing herself in front of an approaching train. The engineer was unable to come to a stop until the engine and first car had passed over her body, and there resulted an accumulation of horrors such as is rarely met with. The poor girl's body was ripped open from the left shoulder to the pelvis, and the limbs, with the exception of one arm, were torn from the trunk. The lacerated members were either strewn along the track or fell to the street below, and a man who was standing under the track was struck on the shoulder by the liberated fetus.

**SUCCESSFUL USE OF TETANUS ANTITOXIN.** — A recovery from tetanus under the use of tetanus antitoxin is reported from the Fordham Hospital. The patient was a lad fifteen years of age, and the disease was apparently not of traumatic origin, there being no wound on any part of his person or any history of

injury. At the time he was admitted to the hospital the tetanus was marked and his condition was very low. The serum used in the case was obtained from the bacteriological department of the Board of Health, where it had been prepared. The first injection, of twenty cubic centimetres, was given early in the morning. The patient rallied perceptibly after it, and his condition was greatly improved when a similar injection was given at 5 P. M. Subsequently the injections were made regularly at intervals of twelve hours.

**EXAMINATION OF BROOKLYN WATER.**—The unwholesome condition of the water-supply of Brooklyn having attracted public attention and led to considerable comment, Health Commissioner Emery has asked the Board of Aldermen for an appropriation of \$5,000 in order that a thorough chemical, and bacteriological examination may be made and the sources of the impurity of the water may be investigated. In the meanwhile the Commissioner of Public Works has appointed Dr. Albert R. Leeds, formerly of the Stevens Institute, Hoboken, to investigate the condition of the water and to prepare a report embodying the measures he deems requisite to remedy the existing evils.

**CHAIRMAN OF STATE COMMISSION IN LUNACY.**—Governor Morton has appointed Dr. P. M. Wise, Superintendent of the St. Lawrence Hospital at Ogdensburg, Chairman of the State Commission in Lunacy. Dr. Wise was one of the first to advocate State care of the insane, and commenced his efforts in that direction by addressing the superintendents of the poor at their annual convention in Jamestown in 1884. Since he has been at the St. Lawrence Hospital his reports on the improved treatment of the insane have attracted wide-spread attention, and they also resulted in the publication of the bulletin which is now issued quarterly, under the direction of the State Commission in Lunacy, at the Utica State Hospitals. Of this bulletin Dr. Wise is one of the editors.

**INSURANCE AGAINST HYPODERMIC ACCIDENTS.**—The *Sun*, in an interesting editorial entitled "Insurance against Hypodermic Accidents," refers to an unusual claim for accident assurance which has formed the basis of a suit recently before the Appellate Division of the Supreme Court in the Third (Albany) Department, where it has just been decided that the trial court was wrong in dismissing the complaint, and that the plaintiff is entitled to have the case tried by a jury. The plaintiff is a physician in Essex County, New York. In the autumn of 1894 he was driving between the towns of Hague and Ticonderoga, when he was overcome by extreme exhaustion arising from an injury which he had received some time previously. He stopped his horse in the road and proceeded to administer to himself a hypodermic injection of morphia. Just as he inserted the needle into his leg his horse suddenly started, and this caused him to drive the needle much deeper than he intended. The wound thus produced gave rise to a violent cellulitis, with

prolonged suppuration. In consequence, he was disabled for a period of twenty-two weeks, and for this disability he claimed indemnity to the amount of \$487.50 from the Inter-State Casualty Company, which had insured him "against bodily injuries sustained through external, violent and accidental means" for a term of twelve months.

The company refused to pay, the doctor brought suit, and when the case came on before the Circuit Court in Essex County the presiding judge dismissed the complaint; holding that the injury, even if it occurred just as the plaintiff alleged, was not sustained through external, violent, and accidental means, within the intent and purview of the policy. The Albany Appellate Division, by a bare majority, three judges to two, declares this ruling to have been erroneous, and decides that the jury should have been allowed to determine whether the injury was accidental or not. If it was caused by the morphia, it was not accidental, because the plaintiff voluntarily made use of the drug. But the plaintiff's own testimony and that of the surgeon who treated him tended to show that the morphia had nothing to do with the trouble. There was also a possibility that the inflammation had been caused by a lack of cleanliness in the needle or skin, in which event also the company would not be liable. But, in the opinion of the three Justices of the Appellate Court forming a majority, the jury would have been warranted in rejecting the theory that morphia or uncleanness constituted the proximate cause of the plaintiff's disability, and might have found that it was due solely to the introduction of the needle deeper into the tissues than was intended, in consequence of the sudden movement of the plaintiff's horse. In that case, says the court, the injury occurred through accidental means.

### Miscellany.

#### THE LAST ILLNESS OF SIR JOHN MILLAIS.

THE death of the recently-elected President of the Royal Academy bears a rather striking resemblance to that of the Emperor Frederick, although their spheres of activity were of a different sort. Both were no doubt suffering from the disease of which they died when they undertook the work of the high positions to which they had been called.

Millais is said to have suffered always from a weak throat and a chronic pharyngitis; he was also an excessive smoker with an especial leaning to the pipe. He first suffered from hoarseness after an attack of influenza in 1894, for which he consulted English specialists. It was agreed at that time that the underlying disease was epithelioma of the larynx, but operation was deemed unadvisable and was not performed. From this time for a considerable period improvement took place in his general condition with gain in weight. Very shortly after his assumption of the duties incident to the presidency of the Academy, the disease again manifested itself in progressive form, with evidences also of systemic infection. From this time on symptoms developed which could leave no



doubt as to the ultimate outcome. Mr. Frederick Treves finally performed tracheotomy with results of a temporarily satisfactory character, but naturally the operation was powerless to relieve the underlying affection, and death ultimately resulted three weeks after a communication had occurred between the trachea and esophagus.

#### INFLUENZA AND SUICIDE.<sup>1</sup>

A CASE which occurred lately at Dover, where a Scottish gentleman committed suicide, is of importance in one particular. At the inquest it was pointed out that he had not been himself since an attack of influenza *two years before*, and that in all probability this attack was the primary cause of the self-destruction. The importance of this fact, with regard to motives for suicide, should not be disregarded, and we are of opinion that a large number of the unexplained cases of suicide which have occurred lately are, in all probability, to be ascribed to post-influenzal cerebral changes. During the six epidemics which have spread over the country since the winter of 1889-90, a very large proportion of the population has suffered, while many of these must have developed nervous symptoms. To turn to a particular instance, a case in court not long ago depended on the question whether a man had committed suicide or not, but the fact that he had had an attack of influenza two years before was not insisted on, owing to the length of time which had elapsed between the attack and the death—just about the same time, it will be noticed, which elapsed between the attack and the suicide in the first case. Medical jurists will do well to remember that, if the actual effects of influenza, though protean, are fleeting, the after-results in many are of long duration, insidious, and often of a nervous character, leading to cerebral instability.

#### THE WAY SOME CURES ARE MADE.

A CORRESPONDENT writing from "Sucker Harbor" to the *Journal of Medicine and Science*<sup>2</sup> upon the wonderful clairvoyance of some crooks (without tubes) gives the following enlivening account of the cure of a Cape Elizabeth maiden by a Portland magnetic physician. In the words, not of the correspondent, but of the healer:

"A year ago last winter, I was called to Cape Elizabeth to attend a young lady who was suffering with a disease, rare and but little understood. When I reached the house I found fourteen—yes, sir, fourteen—of Portland's famous physicians in attendance. When they saw me, the doctors turned up their noses; but I turned to them and said, 'Gentlemen, if you have given this case up, will you please leave the room.' Now, you may believe it or not, they all rushed for the door; and when the last one had passed through, the door of its own accord slammed to, after them. Well, I turned to the young lady's parents, who were sitting by her bedside and taking on at a great rate. By their side was a table literally covered with medicine of all kinds and descriptions. Now, I give no medicine myself, and can't accomplish anything with the stuff around. My guides won't have it; so I said to the folks, 'Throw away that medicine quick!' 'Why doctor,' they said, 'we can't do that, there is one thousand dollars' worth of medicine there.' 'I can't help it,' I said, 'if there is five thousand

dollars' worth, throw it away!' They didn't want to do it, so I had to tell my 'guides' to do it; and suddenly that table tipped over of its own accord and spilled the medicines and broke the bottles all over the floor. Then I told them to bring me a tub of water. When they had done this, I placed my hand in it and magnetized it. It boiled up and up, until the tub would hardly hold it. I told them that the young woman must place her feet in this magnetized water for half an hour, which she did, and in one hour's time, that young woman who had lain flat on her back for seven months, was as well as she ever was, and that after being given up by fourteen of Portland's best physicians. Any one on Cape Elizabeth, *who knows the girl*, will tell you this is so, sir."

#### THE OLD-WORLD CENTENARIANS.

ACCORDING to the *Medical Review*, a German statistician has compiled from the census returns of Europe the data of centenarians the world over. According to his report—

"The German empire, with 55,000,000 population, has but 78 subjects who are more than 100 years old. France, with fewer than 40,000,000, has 213 persons who have passed their 100th birthday. England has 146; Ireland, 578; Scotland, 46; Denmark, 2; Belgium, 5; Sweden, 10; and Norway, with 2,000,000 inhabitants, 23. Switzerland does not boast a single centenarian, but Spain, with about 18,000,000 population, has 410. The most amazing figures found by the German statistician came from that troublesome and turbulent region known as the Balkan Peninsula. Servia has 575 persons who are more than 100 years old; Roumania, 1,084; and Bulgaria, 3,883. In other words, Bulgaria has a centenarian to every thousand inhabitants, and thus holds the international record for old inhabitants. In 1892 alone there died in Bulgaria 350 persons of more than 100. In the Balkan Peninsula, moreover, a person is not regarded on the verge of the grave the moment he becomes a centenarian. For instance, in Servia, there were in 1890 some 290 persons between 106 and 115 years, 128 between 115 and 125, and 18 between 125 and 135. Three were between 135 and 140.

"Who is the oldest person in the world? The German statistician does not credit the recent story about a Russian 160 years old. Russia has no census, he says, and except in cases of special official investigation the figures of ages in Russia must be mistrusted. The oldest man in the world is then, in his opinion, Bruno Cotrim, a negro born in Africa and now a resident in Rio Janeiro. Cotrim is 150 years old. Next to him probably comes a retired Moscow cabman, named Kustrim, who is in his 140th year. The statistician says the oldest woman in the world is 130 years old, but neglects to give her name or address, possibly out of courtesy, or perhaps in view of the extraordinary figures which came to his hand from the Balkans he thought a subject only 130 years old was hardly worthy of particular mention."

#### Correspondence.

##### METHOD OF COMMITMENT TO THE MASSACHUSETTS HOSPITAL FOR DIPSO MANIACS AND INEBRIATES.

FOXBORO, MASS., September 4, 1894.

MR. EDITOR:—I have been told it is not generally known to the profession that the State of Massachusetts has provided a hospital for the care and treatment of alcoholic inebriates, and that a brief statement in regard to the laws governing commitment thereto, together with an outline of the methods pursued in treatment, would be of interest and service to them.

<sup>1</sup> Medical Press, August 19, 1896.

<sup>2</sup> August, 1896.

This is my reason for asking you to allow this communication to appear in your columns.

The establishment of the hospital was authorized by a law enacted in the year 1889. It is located in the town of Foxboro, which is on the same range of hills with and adjoining the town of Sharon, and was declared open for the reception of patients early in February, 1893, since when more than seven hundred have been received.

In securing a commitment the whole course of proceedings is identical with that followed in securing the commitment of an insane person to a hospital for the insane. The only variance is that the certificate given by the examining physicians alleges that the person to be committed is an inebriate and not that he is insane. Under the law men alone can be committed to the hospital, and of them it intends that only those who still preserve the general good-will and respect of their acquaintances and friends shall be eligible, not those of well-known bad character and reputation.

When issued the order of commitment is valid for two years from the date of the admission of the patient to the hospital, but provision is made that the trustees at their discretion may conditionally release him at any time before the expiration of that time and under such conditions as they may deem best. It is also provided that when the patient violates the conditions of his permit to be at liberty, the permit becomes void and the trustees may issue an order for his arrest and return to the hospital. When so returned he becomes subject to all the conditions of his original commitment. Further provision is made that an individual, if he relapses, may return to the hospital at any time before the expiration of the two-year limit and surrender himself, thus becoming again subject to all the conditions of his original commitment. It has been found that this power of recall, as exercised by the trustees, has been beneficial in its effects and is so felt to be by the patients themselves as well as by the relatives and friends. It acts as a restraint over the patients, helping them to resist the temptation to drink, and, what is not less important, allows them to be conditionally discharged, or placed on trial, earlier than would otherwise be thought advisable. Believing that we are dealing with a disease closely related to insanity, in which nearly every tissue of the body is affected, that the chief and most disastrous changes are seated in the tissues of the nervous system, manifesting themselves by obvious changes in the habit, thought and action of the individual, our aim is to upbuild our patients morally and physically, knowing that only when a normal or approximately normal physical condition is arrived at can we expect the nerves to be at rest and their craving for the narcotic action of alcohol to cease, and the power of resistance, the ability to withstand temptation be restored. We believe that the treatment of the disease requires time, and it is our custom to require each patient to remain under treatment for six consecutive months, the shortest time that in our experience and that of others who have carefully studied the subject seems likely to be of lasting benefit.

Our first aim is to protect the patient against himself in his state of weakened and diminished will-power, to prevent a further aggravation of his condition by the continued use of the narcotic poison alcohol in any form. We then seek to restore him to an approximately normal physical condition by the use of appropriate medicines, healthful surroundings, sunny and well-ventilated rooms, abundant, simple and nourishing food, regularity in habits of sleep, rest and exercise, as well as occupation and recreation. As soon as seems expedient each patient is put on parole within the limits of the hospital grounds in the hope of improving his general health through the influence of pure air and sunshine, and, what is not less important, of reviving and strengthening his probity, self-respect and tenacity of purpose by inducing him to live up to the conditions of his parole.

Definite exercise adapted to the peculiar needs of the individual is given under the direction of a competent teacher of physical training, and these exercises are fol-

lowed by the use of a tempered spray-bath. The mental and physical improvement following the continued use of the baths and exercises is apparent to the patients as well as to the physicians. Occupation is found in the care of the stock, in the cultivation of vegetables and other farm-work, in the care of the dining-rooms, in the kitchen and laundry work, in the making of general repairs, and in the manufacture of brooms, which in its different steps affords light, clean work adapted to the varying ability of the men.

Recreation is found in the bowling-alley, base-ball, library-books, magazines and games. From time to time the patients have arranged and conducted entertainments, employing such talent as was to be found among themselves, while the hospital authorities have provided a series of talks upon the ethics of daily life and also various lectures upon travel and science, some of which have been illustrated by the stereopticon.

Each year an inquiry is made as to the result of treatment in the cases of those who have been discharged. This inquiry is made by an officer of the hospital, who personally interviews probation officers, police and town officials, friends and relatives, as well as the patient himself. We believe that favorable results have been obtained thus far, and that they will be still better in the future.

Very truly yours,

M. HUTCHINSON, M.D.,  
Superintendent.

#### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 29, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from:					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York . . .	1,892,332	736	382	23.24	13.70	16.24	.84	2.66	
Chicago . . .	1,678,967	423	188	32.16	11.76	25.36	2.64	2.64	
Philadelphia . . .	1,164,000	356	148	17.08	9.24	11.76	2.80	1.40	
Brooklyn . . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . . .	560,000	—	—	—	—	—	—	—	
Boston . . .	494,205	241	98	20.50	12.30	14.76	2.06	2.87	
Baltimore . . .	496,315	203	90	24.70	3.80	7.00	4.00	1.50	
Cincinnati . . .	386,000	91	28	10.90	17.44	7.63	1.09	2.18	
Cleveland . . .	314,637	105	53	16.32	5.76	11.52	2.88	1.92	
Washington . . .	275,500	89	38	19.04	7.84	15.68	2.24	1.12	
Pittsburg . . .	238,617	—	—	—	—	—	—	—	
Milwaukee . . .	275,000	—	—	—	—	—	—	—	
Nashville . . .	87,754	28	12	13.28	10.71	—	3.57	—	
Charleston . . .	65,165	—	—	—	—	—	—	—	
Portland . . .	40,000	—	—	—	—	—	—	—	
Worcester . . .	98,687	34	16	32.34	17.64	14.70	2.94	2.94	
Fall River . . .	88,020	50	31	24.50	4.00	18.00	2.00	4.00	
Lowell . . .	64,359	47	25	36.21	4.26	34.08	2.13	—	
Cambridge . . .	51,619	18	8	33.33	5.55	22.22	5.55	—	
Lynn . . .	62,355	19	—	31.56	5.26	26.30	—	—	
New Bedford . . .	55,254	29	19	44.85	3.45	44.85	—	—	
Springfield . . .	51,534	29	13	24.15	10.35	24.15	—	—	
Lawrence . . .	52,153	—	—	—	—	—	—	—	
Holyoke . . .	40,149	—	—	—	—	—	—	—	
Salem . . .	34,437	10	5	40.00	10.00	30.00	—	—	
Brookton . . .	33,157	15	7	52.28	6.66	52.28	—	—	
Haverhill . . .	30,185	20	9	25.00	5.00	20.00	5.00	—	
Malden . . .	29,709	4	1	—	25.00	—	—	—	
Chelsea . . .	31,295	12	4	25.00	8.33	8.33	—	8.33	
Fitchburg . . .	26,394	16	5	18.75	6.25	18.75	—	—	
Newton . . .	27,022	5	1	20.00	—	20.00	—	—	
Gloucester . . .	27,663	—	—	—	—	—	—	—	
Taunton . . .	27,093	—	—	—	—	—	—	—	
Waltham . . .	20,877	5	1	20.00	40.00	20.00	—	—	
Quincy . . .	20,712	9	6	22.22	11.11	22.22	—	—	
Pittsfield . . .	20,447	8	4	50.00	—	37.50	—	12.50	
Everett . . .	18,578	12	8	25.00	25.00	25.00	—	—	
Northampton . . .	16,738	—	—	—	—	—	—	—	
Newburyport . . .	14,554	3	0	33.33	—	—	33.33	—	
Amesbury . . .	10,920	—	—	—	—	—	—	—	

Deaths reported 2,735: under five years of age 1,228; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 657; diarrheal diseases 483; consumption 307; acute lung diseases 146; diphtheria and croup 59; typhoid fever 57; whooping-cough 30; cerebro-spinal meningitis 12; measles 8; scarlet fever 7.

From whooping-cough New York 14, Chicago 6, Baltimore 3,

Philadelphia, Boston, Providence, Nashville, Cambridge, Salem and Chelsea 1 each. From cerebro-spinal meningitis Worcester 4, New York 2, Philadelphia, Boston, Providence and Lynn 1 each. From scarlet fever New York and Philadelphia 2 each, Chicago, Nashville and Hyde Park 1 each. From measles New York 5, Nashville 1. From erysipelas New York 2, Philadelphia 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending August 24th, the death-rate was 18.0. Deaths reported, 3,743; diarrhea 453, diphtheria 84, measles 77, whooping-cough 71, fever 51, scarlet fever 50.

The death-rates ranged from 11.5 in Norwich to 25.5 in Salford: Birmingham 19.7, Bradford 16.0, Cardiff 16.3, Gateshead 17.5, Hull 20.8, Leeds 17.1, Leicester 17.6, Liverpool 19.6, London 16.8, Manchester 22.4, Newcastle-on-Tyne 17.7, Nottingham 14.5, Sheffield 20.1.

### METEOROLOGICAL RECORD

For the week ending August 29th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. °		Rainfall in inches
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..23	29.97	69	74	64	76	80	78	S.E.	7	9	O.	.06
M..24	29.94	76	83	68	76	93	84	N.W.	8	4	O.	.02
T..25	30.09	68	72	63	55	53	54	N.	12	7	O.	.02
W..26	30.15	66	72	60	88	90	89	E.	5	9	O.	.02
T..27	30.06	68	74	62	84	67	76	S.	4	2	O.	.06
F..28	30.26	62	70	55	56	88	72	N.W.	5	5	C.	
S..29	30.26	60	67	54	60	61	60	N.	6	12	C.	

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threat-  
ening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 29, 1896, TO SEPTEMBER 4, 1896.

LIEUT.-COL. ALFRED A. WOODHULL, deputy surgeon-general, granted leave of absence for one month and ten days, to take effect about September 15, 1896.

MAJOR HENRY S. TURBELL, surgeon, upon being relieved from duty at Fort Riley, Kan., is ordered to Willets Point, N. Y., for duty, relieving MAJOR EGON A. KOEPPER, surgeon.

MAJOR KOEPPER, upon being thus relieved, is ordered to Fort Crook, Neb., for duty.

FIRST-LIEUT. FREDERICK P. REYNOLDS, assistant surgeon, is relieved from duty at Fort Clark, Tex., and ordered to Fort McIntosh, Tex., for duty, relieving FIRST-LIEUT. ROBERT S. WOODSON, assistant surgeon.

FIRST-LIEUT. WOODSON, on being thus relieved, is ordered to Jackson Barracks, La., for duty at that station, relieving CAPTAIN JUNIUS L. POWELL, assistant surgeon.

CAPTAIN POWELL, on being thus relieved, will report to the president of the examining board, appointed to meet at the office of the surgeon-general of the Army, for examination for promotion and upon conclusion of examination, is ordered to Fort Riley, Kan., for duty, relieving MAJOR HENRY S. TURBELL, surgeon.

### OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SIXTEEN DAYS ENDING AUGUST 31, 1896.

BAILHACHE, P. H., surgeon. Detailed to represent Service at meeting of American Public Health Association. August 24, 1896.

PURVIANCE, GEORGE, surgeon. Relieved from duty at Philadelphia, Pa., and directed to proceed to St. Louis, Mo., and assume command of Service. August 25, 1896.

HAMILTON, J. B., surgeon. When relieved from duty at Chicago, Ill., to proceed to San Francisco, Cal., and assume command of Service. August 25, 1896.

GASSAWAY, J. M., surgeon. Granted leave of absence for thirty days from October 1, 1896. August 24, 1896.

GODFREY, JOHN, surgeon. When relieved from duty at San Francisco, Cal., to proceed to Chicago, Ill., and assume command of Service. August 25, 1896.

WHEELER, W. A., surgeon. When relieved from duty at Ellis Island, N. Y., to proceed to Cincinnati, O., and assume command of Service. August 25, 1896.

BANKS, C. E., surgeon. To proceed from Washington, D. C., to Boston, Mass., for temporary duty. August 21, 1896.

CARMICHAEL, D. A., passed assistant surgeon. Granted leave of absence for thirty days from September 6, 1896. August 17, 1896.

WARDEN, EUGENE, passed assistant surgeon. Granted leave of absence for five days. August 25, 1896.

BROOKS, S. D., passed assistant surgeon. Directed to rejoin station at St. Louis, Mo., and when relieved from duty at that place to proceed to Port Townsend, Wash., and assume command of Service. August 25, 1896.

WHITE, J. H., passed assistant surgeon. Relieved from special duty at Key West, Fla., and directed to rejoin station at New York, N. Y. August 24, 1896. Detailed for duty in connection Immigration Service at Ellis Island, N. Y. August 25, 1896.

CARRINGTON, P. M., passed assistant surgeon. To proceed to Chicago, Ill., and assume temporary command of Service. August 25, 1896.

KINYOUN, J. J., passed assistant surgeon. Detailed to represent Service at meeting of American Public Health Association. August 24, 1896.

PERRY, T. B., passed assistant surgeon. Detailed to represent Service at meeting of American Public Health Association. August 24, 1896.

VAUGHAN, G. T., passed assistant surgeon. Detailed for duty in connection with Immigration Service at Philadelphia, Pa. August 25, 1896.

COBB, J. O., passed assistant surgeon. When relieved from duty at Cincinnati, O., to proceed to New York, N. Y., for duty. August 25, 1896.

STIMPSON, W. G., passed assistant surgeon. Relieved from command of Service at Port Townsend, Wash., on arrival of Passed Assistant Surgeon S. D. BROOKS. August 25, 1896.

SPRAGUE, E. K., assistant surgeon. When relieved from duty at New York, N. Y., to rejoin his station at Boston, Mass. August 27, 1896.

CUMMING, H. S., assistant surgeon. When relieved from duty at Norfolk, Va., to proceed to Evansville, Ind., for temporary duty. August 25, 1896.

GREENE, J. B., assistant surgeon. To proceed from Baltimore, Md., to Cleveland, O., for temporary duty; upon completion of which to rejoin station. August 25, 1896.

### SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, CENSORS' MEETING. — The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library, No. 19 Boylston Place, on Thursday, September 17th, at 2 o'clock, P. M. Candidates should make personal application to the secretary and present their medical diploma or its equivalent, at least three days before the examination.

JOHN L. AMES, M.D., Acting Secretary, 92A Pinckney St.

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS. — The annual meeting of this Association, under the presidency of Dr. C. S. Parkhill, of Hornellsville, will be held on November 17, 1896, at the Academy of Medicine, New York City.

C. B. HERRICK, M.D., Secretary, Troy, N. Y.

### BOOKS AND PAMPHLETS RECEIVED.

Practical Diagnosis, the Use of Symptoms in the Diagnosis of Disease. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Laureate of the Medical Society of London, of the Royal Academy in Belgium, etc. In one octavo volume of 566 pages, with 191 engravings and 13 full-page colored plates. Philadelphia: Lea Brothers & Co. 1896.

A Manual of Materia Medica and Pharmacology, comprising all Organic and Inorganic Drugs, which are and have been Official in the United States Pharmacopoeia, together with Important Allied Species and Useful Synthetics, for Students of Medicine, Druggists, Pharmacists and Physicians. By David M. R. Calbreth, M.D., Professor of Botany, Materia Medica and Pharmacognosy in the Maryland College of Pharmacy, Baltimore. In one handsome octavo volume of 812 pages, with 445 illustrations. Philadelphia and New York: Lea Brothers & Co. 1896.

## Original Articles.

A CASE OF ESOPHAGEAL HEMORRHAGE,  
WITH CIRRHOSIS OF THE LIVER.<sup>1</sup>

BY G. M. GARLAND, M.D., BOSTON.

It is not my purpose to treat of the various features of hemorrhage in cirrhosis, but simply to report a case that fell under my observation recently in consultation, together with two other cases, one of which was kindly sent to me by Professor Osler, of Baltimore, and the other by Professor Councilman, from the City Hospital in Boston.

This subject is extremely interesting, not only historically, but clinically. The fact that up to some ten or twelve years ago this complication of cirrhosis was practically unknown, and that men of such large opportunities, both clinically and pathologically, as Bamberger and Rokitsansky, when their attention was called to the subject, testified that they had never seen such cases, or had only recognized one or two instances, lends to the subject great interest.

The condition was first discussed by a French writer and afterwards was taken up by German writers; and in the last ten years cases have been gradually accumulating, which would seem to show that this complication is more frequent than at first sight would seem probable. This case which I report is the first one that I have ever met with, or, at least, ever recognized. I saw it in consultation only a few days before the death of the patient. I, therefore, am using the notes that were made by the attending physician, who was also the patient's brother.

CASE OF J. D. S. American, married, produce-dealer. Height, five feet, nine inches; weight, 165 pounds; age, forty-nine years. Always well until present attack. Saw him in November, 1888. He was then passing tarry stools. Said he had had, during the past year, several such passages, and had also vomited dark-colored matter. Complained of feeling weak; no pain. Ordered liquid diet and rest in bed. Made the diagnosis of probable ulcer of the stomach. Resumed business in about a week.

On the afternoon of March 20, 1889, he was attacked with vomiting blood. When I arrived about an hour after the attack commenced, he was still vomiting. The vomiting occurred every five to fifteen minutes. His wife stated that that had been the case since the attack began. Under subcutaneous injections of ergotin (five grains) the vomiting ceased in about an hour. The *vomicus* was in a large slop-jar; this I emptied into another receptacle for the purpose of inspection. It consisted of large, soft clots, slightly discolored, and some fluid blood or gastric secretion, of perhaps a pint, but no food. It was my opinion, and also that of several present, that there were four quarts of coagula.

The patient vomited small amounts of blood on the 21st and 22d — perhaps a half-pint each time, clotted and more discolored than at first. Subcutaneous injections of ergotin (three grains) were given once a day for a week. Diet, milk and lime-water. Tarry stools continued to be passed for about ten days. Convalesced in about six weeks. Slightly jaundiced.

Went to the country, June 1, 1889, and remained until November 1st. Was again attacked with vomit-

ing blood at seven P. M., November 26th; amount, considerable, slightly discolored. Ergotin subcutaneously, rest in bed and rectal enemas: two eggs, four ounces of milk, every six hours.

November 28th, vomited a large amount — soft clots as before, slightly discolored. This vomiting was into a four-quart chamber, and it was *more* than half full. This vomiting was followed by an alarming collapse.

December 1st, vomited between one and two pints of blood. Several days later, another small hemorrhage. Daily injections of ergotin (three grains) were continued. All food *per oris* was stopped, and rectal feeding relied on for alimentation. Two eggs with four ounces of milk, and six ounces of milk and one-half ounce of bovine, alternately every six hours. The prostration very marked. Tarry stools, with large quantities of very offensive flatus, were passed continually until December 18, 1889, when he entered the Massachusetts General Hospital. For several days, however, before entering the hospital, the bowel had become so irritable that the food enemas would be retained only a short time, excepting the morning one following the cleansing enema.

Was discharged from the hospital February 4, 1890. Slightly jaundiced during his sojourn there, and for several weeks after. Gained flesh and strength. Said he felt well, and in October, 1890, entered the employ of the Boston & Maine Railroad as delivery clerk in the freight department. He continued work there, apparently enjoying perfect health until his attack in 1895; gained flesh until he weighed 200 pounds.

On June 4, 1895, at ten A. M., while at work, was attacked with vomiting blood again. Walked home, a distance of about one-quarter of a mile, vomiting several times on the way. I saw him about one P. M.; was still vomiting. Gave subcutaneous injections (five grains) of ergotin — two injections, half an hour between. The vomiting ceased at the end of half an hour. Emptied the vessel containing the *vomicus* into another. This contained what he had vomited after reaching his house. It was my opinion and that of the attendant that there were two quarts of blood and blood-clots, little, if any, discolored.

June 6, 1895, another attack. Vomited about a pint. Ordered absolute rest and rectal feeding. Two eggs and four ounces malted milk, two eggs and four ounces Mellin's food, alternately every six hours. Injections of ergotin as before. Tarry stools, with foul flatus, from the first, and continued for about two weeks, then subsided, and stools became white and clay-colored.

From the first of this attack I gave two drachms of malted milk *per oris* every half-hour to relieve the distress from the pangs of hunger from which he had suffered acutely in former attacks when only rectal feeding was allowed. This relieved all hunger, and he said he was perfectly comfortable.

About three weeks from the first attack, he sat up. Went out in four weeks. Went to the beach July 4th; returned July 8th.

July 9, 1895, at ten P. M., was again attacked with vomiting blood. Saw him at seven A. M., July 10th. Did not see the *vomicus*. He and the attendant said the amount was large. A doctor had given him a subcutaneous injection of ergotin the night before. Rectal feeding, and two drachms malted milk by the

<sup>1</sup> Read before the Association of American Physicians, at Washington, D. C., May, 1896.

mouth, as before. Tarry stools and offensive flatus, but no more vomiting. He again entered the Massachusetts General Hospital July 12th. Discharged August 19th. Much emaciated and intensely jaundiced; passing clay-colored stools. Convalesced slowly; gained little, if any, flesh; gained strength somewhat more. Went to Biddeford Pool, Me. Seemed benefited by the change. Returned September 1st, still passing clay-colored stools. Jaundice still very marked.

September 15, 1895, went to Bradford Springs, N. H. Up to this time, since leaving the hospital, his diet consisted of malted milk, Mellin's food, soft-boiled eggs on toast, and thoroughly cooked oat-meal. His usual meal was two eggs on two slices of toast, and a small saucer of oat-meal with a cup of cocoa; the milk and Mellin's food being drunk between meals, as he felt their need.

On leaving for the Springs, I stated to him, if the waters were of any benefit to him, the effect would probably be manifested in the improvement of the color of the dejections and of the skin. He visited me at the end of two weeks. There was a very marked improvement in the color of the skin, and I inspected the fecal discharge and found it colored all through with bile. He stated he drank freely of the water; that for the first four days its diuretic effect was pronounced; urinated every hour or two, both night and day. Amount of urine very large. Then the bowels took on a diarrhetic action. The second day after, the bowels commenced to act freely; the stools became very yellow. The diarrhea subsided after a few days. The stools remained yellow, and so continued until his last sickness.

He returned to the Springs, and remained until October 16, 1895. Gained twelve pounds. Saw him on his return. Stools were still yellow, and the jaundice had nearly disappeared. Returned to work November 1st.

November 15, 1895, was again attacked with vomiting blood, perhaps a quart. Same treatment as at his last attack. November 18th, small amount of blood vomited. Jaundice returned. Tarry stools; loss of flesh marked. November 23d, vomited about a pint of blood, which was the last time he vomited any blood. Towards the last, fluid blood ran from his mouth, a spoonful or two at a time, on several occasions. The emaciation was so great at this time, that I gave a tablespoonful of bovine with the malted milk and Mellin's food every hour; no solids. Rectal feeding continued. On this he seemed to improve slightly. After two weeks sat up and walked about his room. Stools, still clay-colored.

December 12th, another hemorrhage. Dr. George M. Garland then saw the case with me, and daily until his death. At this last hemorrhage the patient did not vomit. I had instructed him to restrain vomiting when he could do so, as the act would favor further bleeding, by the suction-pump action on the open blood-vessel. This restraint he continued up to the time of his death, although I believe there was constant hemorrhage from the fact that he had black or dark-colored fluid or semi-fluid discharges two to four times a day, and occasionally fluid blood ran out of the mouth.

On December 18th, at twelve M., had quite a severe chill. About three P. M., pulse 120, temperature 103.5°. Complained of pain in the right hypochon-

drium. At nine P. M. the temperature the same, pulse 110. Pain present, but not severe. At nine A. M. on the 19th, pulse 100, temperature 102.5°. Pain about as the night before. Tympanites, marked. The pulse registered 100 to 110, temperature 102° to 103.5°, until death.

December 23d, rectal feeding was discontinued, and the liquid food last mentioned continued every hour and a half. At no time was food ever rejected from the stomach. He was perfectly conscious up to this time, only complained of inability to remember. He did not again complain of pain. The bowels remained much distended.

From this time on, he gradually lost consciousness, although would take nourishment when asked to until the morning of December 26th. Died at six P. M. of that day. An autopsy December 27th.

The patient never complained of dyspepsia to my knowledge. Never, during the whole course of his disease, did he complain of pain until after the chill, although I frequently inquired for this symptom. He said that occasionally he felt a slight burning and itching in the right side (indicating the region over the pylorus). For the last ten years, I should say from personal observation, he was a small eater. Never appeared to require much food to satisfy his appetite. When questioned in regard to it, said food tasted well and he had eaten all he wished.

Dr. W. H. Prescott makes the following report upon the above case:

Body, well developed and nourished; rigor mortis present. Heart, not remarkable.

Lungs, edematous.

Spleen, large and firm; weight, 860 grammes.

Kidney and pelvic organs, not remarkable.

Appendix, swollen, inflamed, and gangrenous.

Slight amount of local peritonitis about appendix, which was bound down by fibrinous adhesions to iliac fascia; no fluid in peritoneum and no other peritonitis; intestines filled with tarry blood.

Stomach contained two quarts or more of fluid and clotted blood; plexus of esophageal veins near cardiac end of stomach much dilated, and in one a hole large enough to admit a good sized probe.

Liver, small; surface of right lobe, "hobnailed"; left lobe, not so cirrhotic; microscopical examination showed much cirrhosis and some fat.

*Anatomical Diagnosis.*—Cirrhosis of liver; chronic passive congestion of spleen, with chronic splenitis; acute gangrenous appendicitis, with local peritonitis; enlargement of the esophageal veins, with rupture and hemorrhage; edema of lungs. No other source of the hemorrhage was found.

**CASE OF J. G. S.** This second case is kindly furnished me by Professor Osler, from the records of the Johns Hopkins Hospital, and is as follows:

He was fifty years old. He had been admitted to the hospital on July 5, 1890; discharged on the 23d of August. Re-admitted, March 26, 1891. Died, July 30, 1891. On admission complained of dyspnea, edema of the legs, pain in the epigastrium. He passed a small quantity of urine. He had been perfectly well until 1886.

Joined the navy in 1860, and in 1886, while at Panama, had had malaria. In 1887 he had typhoid. In 1888 he had fever associated with jaundice and slight edema of the legs. His dyspnea began three months before first admission; and in May, 1890, the edema became more marked. He had been a moderate drinker and had lived well. On admission there

was some lividity of the lips and hands; the pulse was rapid, occasionally intermitting. There was no jaundice; no heart murmurs. The veins at the base of the neck were distended. He left the hospital much improved; but in December the edema returned, and in January the dyspnea also. On the 6th of April, following an attack of diarrhea, blood was noticed in the stools. On the 23d the abdomen was tapped, and 6,000 c. c. of yellow serum drawn off. On the 1st of June, 6,400 c. c. were again removed; on the 7th of July, 12,500 c. c. This time the edge of the liver, which was hard, was distinctly palpable. A hard, firm, irregular mass was felt to the left of the navel, reaching almost to the left costal margin.

On the 23d of July the abdomen was opened, the peritoneal cavity drained, and washed with salt solution. The patient's condition following operation was good until half-past seven P. M.; at this time he became delirious. There was hemorrhage from the bowel the next morning, consisting of fluid and clots, to be followed by two more at eleven A. M. and three P. M. Death occurred at half-past eleven P. M.

*Anatomical Diagnosis.*—Dilated veins in suspensory ligament; atheroma of coronary arteries; congestion and edema of lungs and hemorrhage into lungs; cirrhosis of liver; hemorrhage from erosion of dilated esophageal veins; operation wound in abdomen; fibrinous peritonitis; acute splenic tumor; dilatation of esophageal and lumbar veins. In the anterior abdominal wall there is an incision extending in the median line below the umbilicus for seven centimetres.

Body of a large, strongly built, slightly emaciated man; no edema, excepting of the scrotum; the surface has a slight icteric color.

The peritoneal cavity contains a large amount of clear and slightly yellowish serum. The peritoneum is covered generally by a thick, fibrinous exudate, and the small intestines are glued together by the same.

There are old adhesions between the stomach, colon, omentum, spleen and diaphragm.

The veins in the round ligament are slightly enlarged.

Both lungs are tightly adherent to the chest wall; the lower lobes are injected, and contain numerous hemorrhagic patches.

The heart weighs 330 grammes. Endocardium, somewhat stained with blood; in the papillary muscle, a small amount of fibrous tissue. The coronary arteries are dilated, thickened and atheromatous.

The liver is tightly adherent to the diaphragm and the surrounding viscera, the veins in the suspensory ligament being dilated and tortuous. The liver weighs 1,200 grammes. Surface was roughened by adhesions and by a fibrinous exudate. It is exceedingly irregular—large, round projections, with shallow depressions between them, occurring. The capsule is thickened, and the portal vein measures two centimetres in diameter. The gall-bladder is distended with bright-yellow bile. On section, the liver is of a brownish color, to which a yellowish tinge is added. It is firm and coarsely granular. The dimensions of the liver are 25 by 14 by 7 centimetres.

The spleen is somewhat enlarged, weighing 650 grammes.

The kidneys together weighs 490 grammes, and are somewhat swollen.

The stomach contains a large amount of fluid blood and coagula.

The esophageal veins are much dilated, and project into the lumen of the esophagus 15.5 centimetres. From the stomach there is an erosion, three millimetres in diameter, which passes directly into a superficial vein situated in the mucous membrane. On splitting up the mucous membrane numerous openings in the posterior wall, which pass directly into large venous spaces deeper down, are found.

The small intestine, as well as the large, contains fluid blood.

From the peritoneum an organism was obtained, which was regarded by Dr. Welch as the pneumococcus of Fränkel.

**CASE OF C. A. A.** The next case occurred in the service of Dr. C. F. Withington at the Boston City Hospital, February 17, 1896. He was thirty-seven years old, single. His father died of phthisis. In childhood, had measles, chicken-pox, and scarlet fever. Well and healthy. Has masturbated since his boyhood; at present about three times a week. Has had gonorrhea several times, and fifteen years ago had a chancre. Last had gonorrhea ~~six~~ years ago. Has been troubled with catarrh for years. Has had an occasional slight attack of rheumatism for three or four years. For several years feet have been swollen at times. No hemorrhoids or varicose veins. Six months ago noticed a feeling of distention after eating. There has been considerable gaseous eructation. No nausea or vomiting. Good deal of flatus. Bloating has grown more pronounced of late, particularly after supper. Three weeks ago noticed a little swelling in right epididymis. Drank quite hard until eight years ago. Smokes three cigars daily.

Two weeks ago there was so much pain and swelling in the right testicle that he went to bed, where he has been since. The abdominal distention has greatly increased since he has been in bed, but there has been much less flatus. Bloats up more after every meal, and there has been some pain across belly. Appetite is fair. His urine has been very thick and dark for several days. No swelling of feet for last two weeks. Of late has been rather short of breath. Never noticed yellowness of conjunctivæ until his attention was called to it to-day.

He was well developed and nourished; somewhat pale. The eyes were rather prominent; yellow sclerotics; pupils equal and regular, reacting equally to light and accommodation. Pulse, regular, good strength and volume. Heart and lungs, normal. Liver dulness from sixth rib to costal border. Spleen, negative. Abdomen, prominent; 37 inches in circumference; tympanitic over a section of about five inches. Flat in flank, fluid wave. Edema of the extremities. Reflexes, normal. Skin, dry; papular eruption on back. External hemorrhoids. Genitals: old scar on foreskin; some edema of scrotum; left epididymis somewhat enlarged; right testicle, about two inches in diameter, translucent; right cord, much enlarged.

On February 19th the abdomen was tapped, and about a gallon of clear, decidedly yellow fluid was withdrawn. Dr. Ogden reports on the fluid: "Color, straw-yellow; specific gravity, 1.013; reaction, neutral; albumin, two-thirds per cent.; sugar, absent; sediment, few small, round cells; rarely one slightly fatty, rarely a blood globule."

Liver felt distinctly after fluid was withdrawn two inches below costal border. Spleen is thought to be felt one inch below costal margin. Jaundice present.

The urine was rather high in color; specific gravity, 1.022; red and acid; albumin, absent; Diaz reaction, negative; sugar, absent; sediment, large deposit of urates.

Blood: leucocytes at 2.15 P. M., 19,200.

February 23d, the patient complained a good deal of swelling and of weakness, particularly of hands.



Scrotum was greatly enlarged. Abdomen rapidly filled, and on the morning of the 20th was as distended as before the operation. There was a cutaneous eruption on belly and legs, particularly on the calves. Patient slept very poorly.

On March 11th the patient was tapped, and six and a half pints of clear yellow fluid withdrawn. On the 11th, the right leg was somewhat softer than at last note. Patient slept rather better for the last four nights, but required hypnotics.

On March 11th, at four o'clock P. M., patient spit about half a pint of blood. Morphine given subcutaneously. On the 12th, at 5.40, had a large tarry stool, about half pint. Had another about ten, about one pint. Pulse 172. Some delirium during the night; and the next morning had another hemorrhage. Tarry stool from bowel at eight P. M.; again at ten P. M. Failed steadily from the morning, and died during the night at two A. M. Practically unconscious for last sixteen hours.

Autopsy was held by Professor Councilman, March 13, 1896:

The body length, 159 centimetres. Well built. Abdomen distended; blood about nose, mouth and face. Right leg and thigh considerably swollen.

Heart, weight 230 grammes. Valves and cavities, normal.

Lungs diffusely stained dark reddish-brown; here and there denser, bluish-brown areas. In the branches of the pulmonary arteries are numbers of small emboli at the division of the larger branches. A few of the emboli were adherent.

The spleen, large: weight, 370 grammes. On section, pulp apparently not increased. Follicles distinct.

Kidneys, combined weight, 295 grammes. The capsule peeled off readily. On section, markings normal.

The appendix, five centimetres long; bound down behind the cecum by fibrous adhesions.

The liver weight, 1,560 grammes. The surface fairly smooth. On section, lobules small, very sharply marked out, centres red, periphery yellowish-white.

The stomach much distended; contained about 400 cubic centimetres of clotted blood. The intestines throughout whole extent contained brownish-black material, evidently due to blood. In the lower part of the esophagus the longitudinal veins were all much distended and prominent. Three of these veins were ulcerated into, and small thrombi were present in the vessels at the point of erosion. Pressure on these veins forced blood into the esophagus. There was more or less erosion of the surface of the esophagus and in the immediate region of these eroded vessels. Above and below and in the stomach there was no sign of post-mortem change.

The inferior vena cava was one-third filled by a large reddish-gray thrombus adherent to the posterior wall, which extended as high as the liver and down into the femoral artery and its branches. Beginning with the common iliac, the vessels were completely occluded. The right inguinal glands were considerably swollen. The retro-peritoneal glands on the right side around the iliac vessels were much enlarged, softened, and on section a pus-like fluid-blood came from them. The retro-peritoneal fat tissue on the right side from the brim of the pelvis as high as kidney was also infiltrated with a yellowish, thin, purulent material.

No lesions were found in the testes or epididymis. Half-way between the umbilicus and the pubis were three punctured wounds. No evidence of infection at this point could be discovered.

Bladder and prostate, normal.

**Anatomical Diagnosis.**—Cirrhosis of the liver; dilatation of esophageal plexus of veins, with rupture and extensive hemorrhage into stomach and intestines; purulent infiltration of retro-peritoneal glands and fat tissue on

right side above pelvis; thrombosis of femoral iliac veins and inferior vena cava; chronic splenitis; emboli of lung; hemorrhagic infarction of lung; inhalation of blood into lungs.

**Cultures.**—Spleen: numerous flat, transplanted colonies, with slight depression of centres; pure streptococci. Kidney: many similar colonies of streptococci; one colony of staphylococcus aureus; several of staphylococcus albus. Right lung: innumerable colonies of streptococci; many staphylococcus albus and aureus. Heart: a few colonies of streptococci. Liver: many streptococci; few staphylococci aureus and albus. Thrombi in inferior vena cava; many streptococci; one colony of staphylococcus albus. Cover-slips from pus around inferior vena cava contain great numbers of streptococci in long, typical chains.

In commenting upon this report Professor Councilman says: "The case is interesting, not only from the cirrhosis and the hemorrhage, but from the following streptococcus infection. I do not know the portal of entry of the streptococcus, but I suppose it was through the lungs, or the wound made by tapping. We very frequently have evidences of general infection after death, the infection being due to the entrance of organisms when the resistance of the fluids of the body is reduced to a minimum."

It is well understood now that the dilatation of the veins of the esophagus is the result of an attempt of the overloaded portal circulation to empty itself around the liver by passing along the veins of the short curvature of the stomach, distending them, and working up into the deep veins of the esophagus. In explanation of some of these cases where the cirrhosis symptoms have been late in appearing in connection with the dilatation of the esophageal veins, it has been assumed that such compensatory circulation has been sufficient to take off much of the pressure from the portal circulation, and thus diminish the distention of the abdominal veins and of the hemorrhoidal plexus.

It is useless to try to generalize from such a limited number of cases, as regards diagnosis in conditions of this sort. There are one or two points, however, which have been impressed upon us. One is, that the hemorrhages may continue for a long time, and there may be intervals of apparent recovery. It seems a wonderful thing that the hemorrhages can continue for so long a time before the fatal ending, because, in some of the cases, the distention of the veins produces such pressure on the mucous membrane of the esophagus that it atrophies away and leaves but a single layer of endothelial tissue between the blood and the lumen of the esophagus. It would seem impossible that anything could be swallowed without rupturing this thin partition.

Another point is the regurgitation of the blood, or, rather, a welling up of the blood from the esophagus. In the case I saw this was a marked symptom. In ulcer of the stomach and ulcer of the duodenum I do not recollect that this is a common symptom for the blood to well out of the esophagus while the patient is lying quiet in bed.

There have been a certain number of cases reported where hemorrhage from the esophageal veins occurred without cirrhosis of the liver; so hemorrhage from these veins is not an infallible symptom of cirrhosis. On the other hand, the above cases show that hemorrhage from the esophageal veins may precede many of the other and more familiar symptoms of cirrhosis.



**CASES OF ABDOMINAL SURGERY OCCURRING IN THE FIRST SURGICAL SERVICE OF THE BOSTON CITY HOSPITAL DURING THE FOUR MONTHS' SUMMER SERVICE OF 1895.**

BY FRANCIS S. WATSON, M.D., *Visiting Surgeon.*

(Concluded from No. 11, p. 261.)

**CASE 32. Appendicitis.** Male patient, twenty-five years old.

August 9th. Second attack. First one, eight months ago, ill nine days; recovered without operation. Has been troubled with indigestion, and vomits food often since that attack.

Five days ago had pain and "cramps" in the right iliac region which became rapidly worse. Bowels loose. Vomiting frequent; vomitus dark-colored.

The abdomen was found to be distended and tympanitic. Tenderness over right iliac region, where a tumor is also to be felt. Patient's general condition was poor. Facies suggestive of general peritonitis. Pulse rapid and weak. Operation was performed by Dr. Munro.

A two-inch incision over the tumor disclosed a cavity which contained about three ounces of pus; this was evacuated. The appendix was firmly adherent. Owing to the patient's poor condition it was considered unsafe to prolong the operation, and it was not removed. The pus cavity was (apparently) walled off completely. A glass drainage-tube was inserted.

The patient made an uninterrupted recovery, and was discharged September 7th.

**CASE 33. Appendicitis.** Male patient, fifty years old.

August 10th. The disease had developed after a long attack of rheumatism.

One week ago a little pain and soreness was noticed in the right iliac fossa; the pain became sharper in character and more general over the abdomen. Has had nausea for several weeks, but has not vomited. Bowels regular every day.

A distinct tumor was felt a little to the right of McBurney's point and about two inches above it; it was the size of an egg, and painful on pressure. No general tenderness. Abdomen somewhat distended and tympanitic. Tenderness localized over tumor.

Operation, August 12th, by Dr. Munro. An incision, two inches long, was made over the tumor. The peritoneum was thickened and adherent. On opening a walled off pus cavity, the contents were found to be dark in color and of foul odor. Appendix tied off. Drainage-tube inserted.

September 16th. Patient made a good convalescence, and was discharged to-day with only a superficial wound.

**CASE 34. Acute pyo-salpinx secondary to a perforating appendicitis, and acute inflammation of a large diverticulum growing from the cecum.** Removal of appendix, diverticulum, tubes and ovaries. Recovery.

August 13, 1895. The patient, a strong young Irish girl was in robust health until five days ago, when she was seized with severe pain in the right iliac fossa. Two days later she had a similar pain in the left iliac fossa also. The bowels had not moved since the first day.

On entrance to the hospital on the fifth day her condition was as follows: The abdomen moderately distended and tympanitic, except over the cecum where it was dull on percussion. There was slight rigidity

of the abdominal muscles. There was a well-defined tumor in the right iliac fossa, which extended downward into the pelvis. There was great tenderness over the whole region. Pulse 110, strong and regular. Tongue, bright red and dry. Slight cyanosis of face and extremities. Temperature, 102° F.

Operation, August 14, 1895. The abdomen was opened by an incision parallel with Poupart's ligament and over the most prominent part of the tumor on the right side of the abdomen. About one pint of foul pus was evacuated from an abscess around the cecum, extending upward nearly to the kidney and downward into the pelvis. The cecum and adjacent small intestine were of a dark-purple color, and covered with large patches of greenish-gray exudation, as was also a mass of omentum which was closely adherent to the cecum. Four inches upon the ascending colon was a diverticulum, which was at first thought to be the appendix acutely inflamed. It proved, however, to be a diverticulum of about one-half the length of the little finger and of about the same size. The appendix was presently discovered in the middle of the mass of gangrenous omentum, and closely adherent to the posterior surface of the cecum. It was beginning to be gangrenous, and was perforated at the middle of its mesenteric border. It contained no foreign body. The appendix, gangrenous omentum and diverticulum were tied off and removed. Both Fallopian tubes were enlarged, acutely inflamed, and contained pus; both, with the ovaries also, were removed. There was but little shock. Large drainage-tubes were passed into the pelvis and abscess cavity, which were thoroughly cleansed with peroxide of hydrogen. The abdominal wound was closed around the drainage-tubes. The tubes were removed on the tenth day.

The patient made an uninterrupted recovery. The abdominal wound closed in four weeks, and the patient went home well at the end of the fifth week.

**CASE 35. Non-perforating appendicitis.** Appendix removed. Union of the abdominal wound by first intention.\*

The patient, a strong young man, was seized with severe pain in the right iliac fossa on the day before entering the hospital. There was rigidity of the abdominal muscles, no tumor. The bowels had not moved for two days. Slight abdominal distention. Temperature 101° F; pulse 110. Tongue coated. General condition good.

Operation, August 31, 1895 (third day of the disease). Abdomen opened by an incision parallel with Poupart's ligament, and two inches above the anterior superior spine of the ilium. The peritoneum was not thickened. There was a small quantity of serous fluid in the neighborhood of the appendix. The latter was in its normal position, its tip firmly adherent to a coil of the small intestine. It was acutely inflamed, but not perforated. There was a localized peritonitis of small extent in the region of the appendix. The appendix was separated from its adhesions, tied near the cecum and removed. The neighboring parts were thoroughly cleansed with peroxide of hydrogen, and the abdominal wound was closed tight.

Convalescence was uninterrupted; the wound healed by first intention. The patient was discharged well at the end of three weeks.

**CASE 36. Perforating appendicitis.** Appendix removed. Death.

\* Operation performed by Dr. R. W. Lovett.

Four days ago the patient was seized with a violent pain in the abdomen, which became localized twenty-four hours later in the right iliac fossa. He entered the hospital on the fourth day. His face and extremities were slightly cyanotic; pulse 118, and weak; tongue brown and cracked; temperature 101°. Abdomen much distended; a hard mass could be felt by rectal examination high up in the rectum on the right side.

Operation, September 5, 1895. Oblique incision, parallel with Poupart's ligament, through McBurney's point. An abscess containing about four ounces of foul pus, lay about the cecum; it was walled off from the peritoneal cavity everywhere except toward the pelvis. The appendix was in its normal position, was much thickened, perforated about midway, and contained two hard fecal concretions; it was tied off at its junction with the cecum with one silk ligature, and removed. The abscess cavity was thoroughly cleansed with peroxide of hydrogen; drainage-tubes were inserted, and the abdominal wound was sutured around them.

The patient did well until the sixth day, when the abdominal distention, which had subsided, reappeared; obstinate constipation returned. Symptoms of collapse appeared in the course of the following day; these gradually increased, and on the thirteenth day the patient died.

CASE 37. Perforation of the cecum and appendix, fecal concretions. Appendix removed, suture of the cecal perforation. Formation of a fecal fistula, closed in two months. Recovery.

A strong, previously healthy woman, thirty-five years old, entered the hospital on the sixth day of the disease. The abdomen was greatly distended, and a large tumor could be felt in the right iliac fossa extending upward toward the kidney. Temperature 101°. The general condition good, pulse 118, and of fair strength.

Operation, September 9, 1895. The abdomen was opened by an incision as for lumbar colotomy. The peritoneum was greatly thickened. A large abscess was incised far back toward the lumbar region, the peritoneal cavity being guarded from infection as far as possible. The appendix was found with its tip lying high up toward the kidney, and firmly bound to the underlying fascia by old adhesions. It was perforated at its junction with the cecum, the perforation extending to the latter and making an opening the size of a twenty-five-cent piece in it. The appendix was tied off from the cecum, and the hole in the latter was closed with fine silk sutures, after refreshing the edges. The abscess was drained toward the lumbar region.

The pulse and temperature remained as before the operation for three weeks. A fecal fistula established itself on the fourth day and persisted for two months, then closed spontaneously, and the patient made a good recovery.

CASE 38. Perforating appendicitis. Appendix not found. Large abscess incised and drained. Recovery.

The patient was seized with severe abdominal pain about the umbilicus, six days ago. The pain soon became localized in the right iliac fossa. There has been no movement of the bowels since the illness began. No vomiting. The patient's general condition is bad. Pulse weak and 115. Extremities slightly cyanotic and cool. Temperature 102°. Abdomen

distended, and a hard tumor lying above the crest of the ilium and extending backward toward the lumbar region.

Operation, September 16, 1895. The abdomen was opened by an oblique incision, parallel with the crest of the ilium and across the most prominent part of the tumor. A large abscess lay behind the cecum; this was opened posteriorly, the peritoneal cavity being protected by sterilized gauze beforehand, and after being cleansed thoroughly with peroxide of hydrogen, was drained through the upper and posterior angle of the wound. The appendix could not be found. There were two fecal concretions found in the abscess cavity.

The patient made an uneventful recovery, and was discharged from the hospital well, at the end of the fifth week.

CASE 39. Perforating appendicitis. Appendix removed. Recovery.

Six days ago the patient was seized with violent pain in the lower part of the abdomen. The pain became less on the following day, and he went to work (as a day-laborer) again, and continued to work until to-day, when the pain became very severe and localized in the right iliac fossa, and he became greatly prostrated. There had been no constipation until the last two days.

The patient is a strong young Irishman, but now greatly prostrated. The extremities are cyanotic; pulse weak, irregular and 120; temperature subnormal. The abdomen is greatly distended and its muscles are rigid. There is a large tumor in the right iliac fossa, extending far up toward the kidney.

Operation, September 19, 1895. The abdomen was opened by an oblique incision, parallel with the crest of the ilium, and three inches above it. The peritoneum was edematous. It was incised far back toward the lumbar region, and a very large abscess evacuated. The pelvis was filled with foul pus, and the abscess extended nearly to the kidney. The peritoneal cavity was, however, walled off by adhesions. The appendix lay in its normal position, was bound to the underlying fascia by adhesions, and was perforated close to its junction with the cecum. It was tied off above the perforation, and the portion of the cecum around it was brought over and sutured above it.

The patient was in a critical condition for the next two days, but then rallied and made a good recovery.

CASE 40. Perforating appendicitis without pus formation. Appendix removed. Recovery.

The patient, a young woman, was seized five days before entering the hospital with violent abdominal pain, which began in the epigastrium and became localized in the right iliac fossa on the second day. The bowels had not moved since the beginning of the attack. On entrance to the hospital there was marked tenderness over the region of the cecum; rigidity of the abdominal muscles, most marked in the same place, and an ill-defined tumor. The abdomen was slightly distended. The patient's general condition was good. Pulse 110 and strong; temperature 101° F.

Operation, September 22, 1895. The abdomen was opened by an oblique incision through McBurney's point. The appendix lay in its normal position, and was attached to the underlying fascia by light adhesions, which were easily separated. The appendix was enlarged, deeply congested, and perforated near its tip by a gangrenous area which had not quite reached the exterior of the organ. The appendix was

tied off with one stout silk suture. There was no pus formation. The region about the appendix and cecum was thoroughly cleansed with peroxide of hydrogen, a drainage-tube inserted, and the abdominal wound sutured around it.

The patient made an uneventful recovery.

CASE 41. Perforating appendicitis. Appendix removed. Recovery.

A girl, age twenty-two years, entered the hospital on the fifth day after being attacked with severe abdominal pain, which began in the epigastrium and subsequently became localized in the right iliac fossa. Her general condition was bad when she entered. Cyanosis of the extremities; weak pulse of 120; abdomen distended. The bowels had not moved for five days. There was no tumor to be felt in the abdomen.

Operation, September 22, 1895. Abdomen opened by an oblique incision through McBurney's point. There was no pus found. The appendix lay in its normal position; it was greatly enlarged and inflamed, and toward its tip was a gangrenous spot which had just begun to perforate. The appendix was tied off at its junction with the cecum. The wound was closed except for the space to allow of the passage of a drainage-tube. There was no relief of the pain. Abdominal distention or obstipation continued for three days. On the third day the temperature suddenly rose two degrees; the abdominal wound was reopened, and about six ounces of pus was found deep down behind the cecum. The abscess extended into the pelvis; drainage-tubes were reinserted, the abscess cavity having been thoroughly cleansed with peroxide of hydrogen.

The patient after this made a good recovery, and left the hospital six weeks after entry, well.

CASE 42. Perforating appendicitis. Appendix removed. Recovery.

The patient, a woman about thirty years of age, entered the hospital on the fifth day after being attacked with abdominal pain, which from the beginning was localized in the right iliac fossa. There was a slight abdominal distention, moderate tenderness, and a distinct area of induration in the right iliac fossa. The patient's general condition was good; pulse 102, temperature 102° F.

Operation, September 28, 1895. The abdomen was opened by an oblique incision through McBurney's point, and the peritoneal cavity was protected by packing with sterilized gauze previous to opening an abscess containing about two ounces of foul-smelling pus which occupied the neighborhood of the appendix and in which that organ lay. The appendix was perforated about its middle by a gangrenous process, and contained one fecal concretion. The abscess was thoroughly walled off in every direction from the peritoneal cavity and the appendix tied off with one silk ligature. The abscess cavity was thoroughly cleansed with peroxide of hydrogen and a large drainage-tube inserted through the abdominal wound, which was closed around it.

The patient made a good recovery, and was discharged well.

CASE 43. Stricture of the female urethra. Suprapubic cystotomy. Death from sepsis and renal disease.

Female, about forty years old. For five years she has noticed a gradual diminution in the size of the urinary stream. For six months the urine has been passed *guttatim*. There is no venereal history to be

obtained, and no assignable cause for the stricture of the urethra which she has, and which is impassable.

Operation, July 1, 1895. Attempts to enter the bladder through the urethra failed, owing to an impermeable stricture of the urethra close to the vesical orifice. The bladder was therefore opened by suprapubic cystotomy. A small probe passed through the urethra, and careful examination of the interior of the bladder also, even then, failed to discover any opening into the urethra from the bladder; the end of the probe in the urethra was, however, separated from the bladder by an exceedingly thin layer of mucous membrane only, and this was incised from within the bladder to make a new vesical orifice. A catheter *à demeure* was placed in the bladder through the urethra. Double drainage-tubes were carried from the bladder through the abdominal wound. The bladder wound was sutured around them, and the upper end of the abdominal wound was closed.

The patient did perfectly well up to the fourth day; the wound then became septic, the urine bloody and diminished in quantity. Under the use of peroxide of hydrogen the wound became again healthy; but the renal symptoms continued; and two days later the patient became uremic and she died on the tenth day. Autopsy not permitted.

CASE 44. Calculus impacted in the ureter (?).

CASE 45. Pyo-nephrosis.

CASE 46. Pyo-nephrosis — renal calculus in a floating kidney.

CASE 47. Movable kidney. Nephrorraphy.

CASE 48. Tuberculous kidney. Resection of one-half of the organ.

CASE 49. Perforating typhoid ulcer. Intestinal suture, recovery.

CASE 50. Hour-glass contraction of the stomach, due to cicatrization of former gastric ulcer. Anastomosis between the upper and lower portions of the stomach. Recovery, with restoration of health.\*

## HEMORRHAGIC PLEURISY: A STUDY OF THIRTY CASES.

BY GEORGE G. SEARS, M.D.,  
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THE present paper is based on an analysis of thirty cases, twenty-seven men and three women, taken from the records of the Boston City Hospital, in whom a pleural effusion, sooner or later in its course, assumed a hemorrhagic character. With one possible exception, a patient in the last stages of phthisis associated with hepatic cirrhosis, where a distinction was impossible, the effusion was the result of a pleural inflammation and not a local manifestation of a general dropsy. In thirteen cases it was present in the left side, and in eleven in the right alone, while in six both were involved, in two of the latter bloody fluid being found in each chest. In two others one pleura contained blood and the other clear serum. In the remaining two cases the character of the exudate was determined only in one side, the amount in the other not being sufficiently large to require aspiration. It is perhaps questionable whether five cases, in which the first and one in which the second tapping also was macroscopically clear, while the second or third was bloody,

\* Cases 44-48 reported in Boston Medical and Surgical Journal, June 11, 1896. Case 49, *Ibid.*, March 22, 1896. Case 50, *Ibid.*, April 2, 1896.

should have been included in this number, from the possibility that the hemorrhage may have been due either to accidental injury by the needle or to rupture of the newly-formed vessels on the surface of the pleura during the expansion of the lung. The former is a comparatively rare event which would probably show itself by the appearance of blood in the latter portion of the fluid withdrawn at the time, while the fact that the rank and file of cases undergo repeated aspirations and yet remain serous throughout would indicate, that, if the escape of blood occurred during expansion, the same changes had taken place, either locally, or in the blood or in the vessels, as in cases which are hemorrhagic from the start, but that some outside influence had been required before such changes became evident. It is possible, also, from the considerable distance between the several sites of puncture that some of the cases were examples of a loculated pleurisy, one cavity containing blood and the other clear serum, while others were instances at the outset of Dieulafoy's microscopically hemorrhagic cases, the presence of large numbers of normal and abnormal red globules being demonstrated in the first exudate, although not in sufficient quantity to give a distinct red tinge.

The question whether some of the cases ought not also to be included, in which the first portion of the fluid ran clear while the later became bloody, need not be discussed in this connection, since only three instances happened to be found, in one of which a large vessel was evidently wounded, while of another, the record states that he turned during the operation and probably scratched himself, and of the third that the hemorrhage resulted from scraping of the canula upon the visceral layer of the pleura.

Special interest attaches to the etiology of these cases from the very generally received opinion that tuberculosis and cancer are the most frequent causes, but unfortunately it is impossible to definitely determine it in every instance, partly from the inherent difficulty of the subject and partly because bacteriological examinations were so rarely made, yet an analysis of them shows conclusively that a hemorrhagic effusion may occur as a symptom in pleurisies of very different origins. Tuberculosis, nevertheless, heads the list as the most frequent etiological factor, though not present in a majority of the cases, eight being classified as due to an uncomplicated tubercular process. Yet the diagnosis was proved only in one case, which came to autopsy, in the others it rested either on the association of characteristic pulmonary or other lesions, or on the course of the disease in spite of repeated failures to find the bacillus either in the sputum or the exudate. Three other cases were associated with phthisis, but as one of them was complicated by hepatic cirrhosis (fatal), one with chronic nephritis, and one with sarcoma of the ribs, while streptococci were found in the effusion, it is difficult to estimate which of several factors may have been operative, since there is no reason why a patient with phthisis should not suffer from a pleurisy due to some other cause than the tubercle bacillus, though this possibility seems to be frequently overlooked. It is interesting to compare this series with a somewhat smaller number of serous pleurisies recently reported by Eichorst, in which fifteen out of twenty-three were proved to be tubercular by inoculation experiments; but no inferences can be drawn since it is possible that in the former the tuber-

cle bacillus may have played an active part in some of the cases which have been classified under other heads. The fact, however, that but one case out of four, which came to autopsy, showed any evidence of tuberculosis is interesting in this connection.

A number were undoubtedly due to infection with the pneumococcus, although positive proof was furnished by its discovery in the effusion in but two, one of which occurred in the course of a chronic nephritis, the other was secondary to pneumonia and eventuated in empyema. It was also demonstrated in the sputum of another in which both acute rheumatism and pneumonia were present, but was not found in the exudate, which was sterile. Two others either accompanied or followed an acute lobar pneumonia, in one of which Friedländer's capsule bacillus was found in the expectoration, and probably also the pneumococcus, although owing to the peculiar wording of the record it cannot be definitely stated. The effusion was sterile. In two more the cause of death was proved by autopsy to be a general infection with the latter organism, but no mention is made of cultures being taken from the pleural fluid. One had been admitted for puerperal eclampsia, the other for measles. The latter was the only case in which any of the exanthemata was concerned, and here it probably played only a subordinate part, if any, in determining the character of the effusion, as the pneumonic process, to which the pleurisy was secondary, developed late in the course of the disease.

It is an accepted fact that pleurisy is a common complication of acute rheumatism and chronic nephritis, and in the present series this association, in addition to the cases already mentioned in connection with tuberculosis and pneumonia, was represented by three instances of each. The rheumatic cases all ran a very severe course, as all three developed a pericarditis, while in two the endocardium was also involved. In one of the latter infection with the colon bacillus was proved by its discovery in the exudate.

Four may be grouped together as instances of simple pleurisy, in one of which a culture showed a growth of pure staphylococcus aureus. All of them developed in previously healthy individuals, ran an acute course and ended in apparent recovery, more or less fibrinous deposit, however, still remaining at the base of the chest at the time of discharge.

The results of the bacteriological examination of the eleven cases in which it was made are summarized as follows: six were sterile, one contained streptococci and eventuated in empyema, one staphylococci aurei and one the bacterium coli commune. Two contained pneumococci, but for reasons which have already been given this number probably does not fully represent their activity. In a twelfth case miliary tubercles were found at the autopsy.

That but one case associated with malignant disease is found in this series, and in this it is doubtful if it possessed any etiological significance, is perhaps explained by the fact that they were largely taken from the general index of the hospital and not from a search through the records, so that it is possible that a pleurisy occurring as a complication may not have been so indexed in the latter that it could find its way into the general catalogue. This may also account for the appearance of but one case in which any of the exanthemata were involved.

The evident reason for the bloody character of the fluid furnished by the pathological state of the pleura

at the autopsy of some of the cases which are due to tuberculosis and cancer may account for the grave significance so generally attributed to this symptom, but the favorable course of the effusion in many cases of the former class would indicate that in a portion of them at least the local lesion is histologically rather than grossly tubercular, and similar to what usually occurs in simple serous effusions arising from this cause, and occurring either with or without marked phthisical changes in the lungs, and that the blood was the result of a general condition which might exert the same determining influence in cases of hemorrhagic pleurisy of tubercular origin as in those which are not. This might be a personal idiosyncrasy, although there was no reason to suspect a hemorrhagic tendency in any of these cases, or the effect of a grave constitutional disturbance, which by leading to changes in the blood-vessels or in the blood would allow the easier escape of the latter through rupture or diapedesis. Among the causes which might induce the latter, overwork, exposure, and the neglect of every hygienic and sanitary law are so common in hospital patients that no special stress can be laid upon them, and the same is true, though in much less degree, of over-indulgence in alcohol, which was frankly admitted by nine, while nine others confessed to its use in moderation, a term which under the circumstances admits considerable latitude of definition. Age may have been a factor in some instances, since nine were over forty-one, (seven being over forty-six,) a period when vascular changes may be expected, especially among persons whose manner of life would accentuate any tendency thereto. Fifteen cases occurred during the course of diseases accompanied by serious changes in the blood, in the blood-vessels or in both, five, or six if the case of puerperal eclampsia is included, in which fatty degeneration of the liver and kidneys was found at the autopsy, being associated with nephritis, four with acute rheumatism, two with chronic valvular disease of the heart and one with hepatic cirrhosis. The two remaining cases were suffering from active syphilis, in one of which it was the cause of death, the autopsy showing syphilitic myocarditis with an unusual distention of the cardiac walls and the presence of pulmonary infarctions. There was an effusion in both pleural cavities, but it was bloody only in the left, which was actively inflamed. Several of these factors were frequently combined in the same individual, but there were twenty-three in whom one or more of them were present.

In order to determine the final result in those patients who left the hospital with the issue still in doubt, an effort was made to trace them to their homes, but as, from their nomadic habits, it met with success in but four instances the prognosis in about half the cases must be based on their course while under observation, their condition at the time of discharge and the probable etiology, a certain margin of error being admitted. Eight patients died in the hospital, while seven others were discharged in a practically hopeless condition, one of whom has since died and another is in the last stages of consumption, making exactly fifty per cent. of the whole number. Ten left the hospital practically well after an average stay of 46 days, that is, apart from a sense of debility incidental to a confinement of several weeks, they felt in their normal condition of health and the signs in the chest had either disappeared or were those of a fibri-

nous deposit at the base of the pleura. Five cases must be left out of account as they remained under observation too short a time.

These results show the course of the serious constitutional diseases so frequently associated with pleurisies of a hemorrhagic character rather than the progress of the pleurisy itself, which may have entirely healed long before the fatal result and have contributed to it only indirectly, if at all, by weakening the resisting power of the patient. In sixteen cases one or two aspirations were sufficient to arrest the accumulation of the fluid, and this happened in one case where the autopsy showed the presence of gross tubercular lesions, the visceral and costal pleura being much thickened and studded with grayish-white specks the size of a millet seed. Only a small amount of fluid remained in a coarse mesh-work of fibrous tissue at the base of the lung. In eight cases no conclusions can be drawn, as five died and three were discharged almost immediately after aspiration. Two eventuated in empyema, which, in one following pneumonia, was foreshadowed by the cloudy character of the fluid obtained at the first puncture. In contrast to the latter there were two in which the effusion at the second aspiration proved to be clear serum. In two thoracentesis was not considered necessary, the character of the fluid being shown at the autopsy. In two instances, both of which were undoubtedly tubercular and ran a rapidly fatal course after admission, the chest immediately refilled after each tapping, which was performed three times, the amounts withdrawn varying from one to six pints. The behavior of the exudate in the two last cases brings up the only point in treatment which seems worthy of mention, as it suggests the impropriety of too frequently repeated punctures or the withdrawal of too large amounts of fluid, since, if reaccumulation is rapid, aspiration is practically a venesection and more harm may result from the loss of blood than from the presence of the fluid. In a few instances where a large amount was removed, the discomfort of the patient seemed to be increased and the tendency to refill made greater by allowing the highly inflamed surfaces of the pleura to rub against each other.

The number of cases under consideration is too small to allow conclusions drawn from their analysis to be embodied in statistical form, but the following propositions seem justified:

(1) Hemorrhagic pleurisy may occur either as a primary affection or as a complication occurring in the course of other diseases.

(2) That as in other forms of pleurisy tuberculosis is the etiological factor in a very considerable number of cases, yet the proportion due to other causes is so large that the mere fact of its hemorrhagic character does not justify a diagnosis of tuberculosis, even in the absence of cancer, without corroborating evidence.

(3) That among other causes the pneumococcus takes a prominent rank, but other micro-organisms occasionally are found as the infecting agent.

(4) That in a large proportion of the cases conditions are present which lead to an easy escape of blood from the vessels by producing changes either in the blood, in the vessels or in both. Among them may be mentioned advanced age, alcoholism, and the presence of severe constitutional diseases, of which nephritis and rheumatism are the most prominent.

(5) That, as in cases of simple serous effusion, the

prognosis must be individualized and based on the underlying causes and the general condition of the patient, but that taken as a whole, from the frequent association of other diseases, the prognosis is graver than in simple pleurisy, yet a very considerable number completely recover.

(6) That except when it appears as a complication in the later stages of some other disease a hemorrhagic effusion may be expected to run a favorable course, as in a majority of the cases the chest does not refill after aspiration, which may, however, have to be repeated once or twice.

(7) That, as in simple serous pleurisy, a certain proportion of cases will eventuate in empyema, but that there seems to be no special tendency toward this result.

(8) That in the occasional cases where the chest rapidly refills, aspiration should not be repeated too frequently, lest more harm result to the patient from the loss of blood than from the presence of the fluid.

### EXCISION AND ERASION OF THE KNEE.<sup>1</sup>

BY HAYWARD W. CUSHING, M.D., BOSTON.

I WILL first call attention to these diagrams which represent sections of the knee-joint.

Fig. 2 shows a section in an antero-posterior vertical plane. The remainder are sections in a transverse vertical plane. I wish to show: (1) The relations

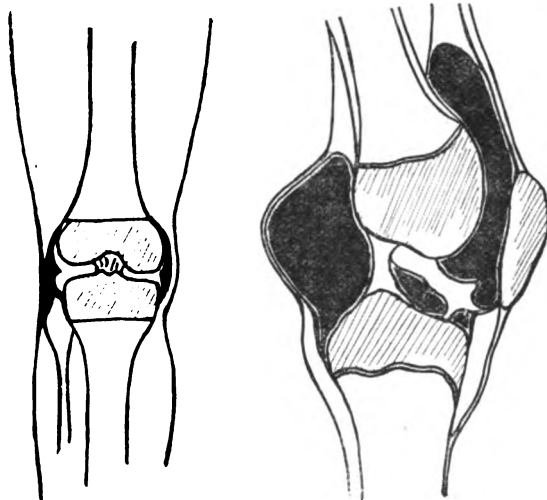


Fig. 1.

Fig. 2.

and extent of the synovial membrane. (2) The position of the epiphyseal line. (3) Various types of tubercular disease. (Diseased areas colored black.)

Especially:

Fig. 3. A circumscribed focus. Joint and synovia intact.

Figs. 4 and 5. The disease has extended into the joint. Epiphysis and synovia are involved.

Figs. 6, 7 and 8. Extensive disease with sequestrum formation and destruction of the joint.

Let us now consider the operation of "Excision."

First, the operation as it has been extensively

described and taught. It is this: The knee-joint is opened by a curved anterior incision, the crucial ligaments are cut, the articular ends of the femur and tibia are resected; care being taken not to injure the epiphyseal line. The patella may or may not be removed, the resected bones are nailed or wired to-

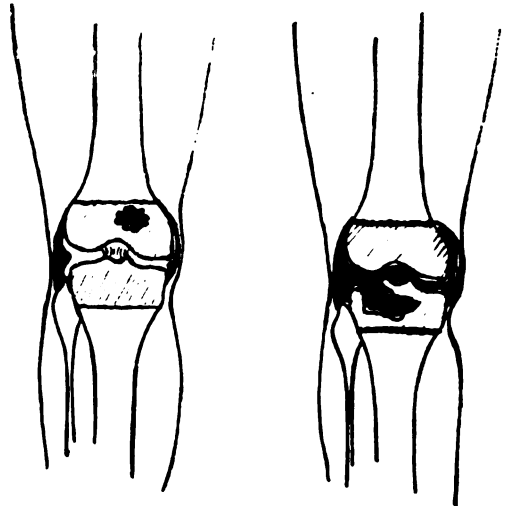


Fig. 3

Fig. 4

gether, the wound is closed with drainage, and an ultimate recovery with ankylosis is hoped for.

What is the result?

Usually, the formation of sinuses and long-continued suppuration.

This is called an "excision" of the knee. It simply removes the joint.

What becomes of the synovia filled with tubercular products and the foci of osseous disease at or beyond

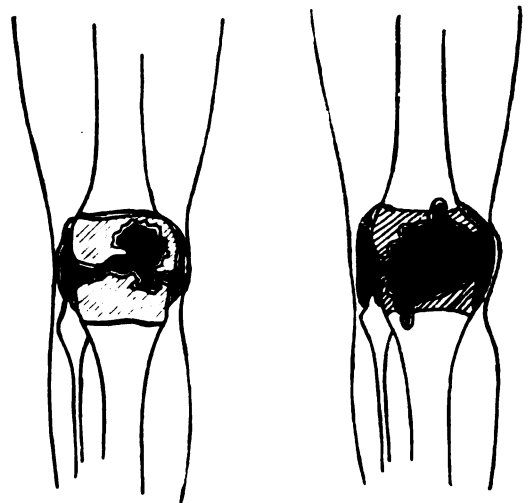


Fig. 5

Fig. 6.

the epiphyseal line? [Note extent and position of disease as shown in figures. Also its relation to synovia and epiphyseal line, especially in Fig. 2.]

All is left behind untouched. The futility of such an operation as a radical one is at once apparent.

Contrast the above with the following operation:

<sup>1</sup> Read before the Massachusetts Medical Society, June 9, 1896, and recommended for publication by the Society.

The joint is opened and examined. Determine as far as possible the origin and extent of the disease. If the synovia is affected remove it with scissors and forceps. Follow it into every nook and pocket. See where it lies. Fig. 2. The bone is next attacked. How? With the sharp curette, chisel and gouge, not

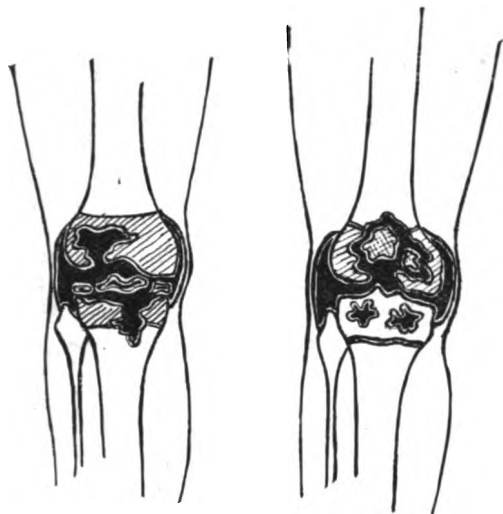


Fig. 7.

Fig. 8.

the saw. The diseased area only is removed. It is scooped out, not sawn off. The bones are united by periosteal silk or catgut sutures. The wound is closed without drainage. The dressing is sterile gauze fixed by plaster-of-Paris.

Results: Primary union under one dressing in three weeks. Firm bony union in eight or nine months. The patient is well.

What is this operation called?

When the disease is limited, an erosion; when extensive, an arthrectomy.

What is its object?

To remove the disease thoroughly wherever it exists. It saves as far as possible the epiphyseal line. What does excision "so-called" do? It simply cuts out a joint.

Now what are the results of this method?

Here are the statistics; but I have time now for conclusions only. They are compiled from those cases alone whose condition I know to-day.

The mortality: It is nothing. No deaths. Eighty-six per cent. are well to-day, and fifty per cent. of the remainder have a fair chance for ultimate recovery.

The local condition: Recovery is in most cases without motion; bony ankylosis. In no case is there motion of any practical value.

Arrested developments: Atrophy and shortening are present in every case to a greater or less extent. The extreme is two and one-half inches. It is proportional to the age of the patient, the extent of the disease and the destruction of the epiphyseal line.

The leg is always straight or nearly so if the after-treatment has been properly carried out. If you want straight legs don't omit fixation as long as there is a tendency to contraction. The contraction can become extreme if neglected. Hence don't make the mistake of omitting fixation as soon as your operation wound is healed or there is apparently bony union.

Contraction can occur months afterward. Time is no criterion. We are continually correcting deformities at the Children's Hospital which have resulted from this cause.

To conclude: When you operate on a tuberculous knee operate so as to remove the disease. An erosion when limited; an arthrectomy when extensive. Reserve the typical excision operation to correct deformity from bony ankylosis.

If properly done the disease can be checked. Apparently cured. I say apparently, for no one can say when a tubercular patient is well.

There will result little or no motion. There will be more or less atrophy. There will be more or less shortening.

This result can occur even with marked coincident disease in other joints.

Operation is indicated: When the disease is unchecked by treatment; when it is extensive; when a patient cannot have proper conservative treatment; when the general condition demands it to save life; to correct deformity of the knee-joint.

## THE TREATMENT OF CARIES OF THE ANKLE-JOINT.<sup>1</sup>

BY CHARLES L. SOUDDER, M.D., BOSTON.

IN the five minutes at my disposal I will present to you the facts regarding the operative treatment of caries of the ankle-joint as accepted by the majority of the Continental, English and American surgeons.

By caries of the ankle is understood a more or less chronic tubercular inflammation, starting in the astragalus, tibia or fibula and occasionally involving other bones of the tarsus — that is, a localized tuberculosis.

The great value of the treatment of caries of the joints by absolute immobilization and fixation is demonstrated beyond any doubt.

All cases of caries of the ankle should be first treated by the mechanical method unless operative interference is indicated by two things:

- (1) A failure of the general health.
- (2) Rapid progress in the local disease.

The moment that the non-operative or mechanical treatment is found inefficient, then an operation is demanded. Partial operations are of little value. Curetting and the burr drill are contraindicated. Complete excision of the diseased part (the entire bone being removed) is the very best operative procedure.

This is proved by the statistics of Culbertson, Hodges, Connor, Koslowski, Neuber, and my own statistics of eighteen cases reported from the records of the Children's Hospital, Boston, together with the evidence obtained from the records of private operators.

All operators advise complete excision of the diseased bone in *childhood*, because the duration of the disease is shortened, there is no mutilation of the foot, the general health improves immediately, there is no risk of sepsis, the danger of infection is removed, it is a safe operation, it will end the disease, and it will leave a serviceable limb.

In the case of adults partial operations are not valuable. If the expectant treatment fails amputation is necessitated.

<sup>1</sup> Read before the Massachusetts Medical Society, June 9, 1896, and recommended for publication by the Society.



**Methods of Excision.**—The two lateral incisions are preferable—they expose the joint satisfactorily and no tendons are divided.

NOTE.—Two cases of caries of the ankle were exhibited which had been operated upon by excision of the astragalus four and five years previously. A perfectly useful ankle in each case exists to-day, with scarcely a perceptible limp.

### THE MOBILITY OF THE NORMAL SPINE IN RECUMBENCY.<sup>1</sup>

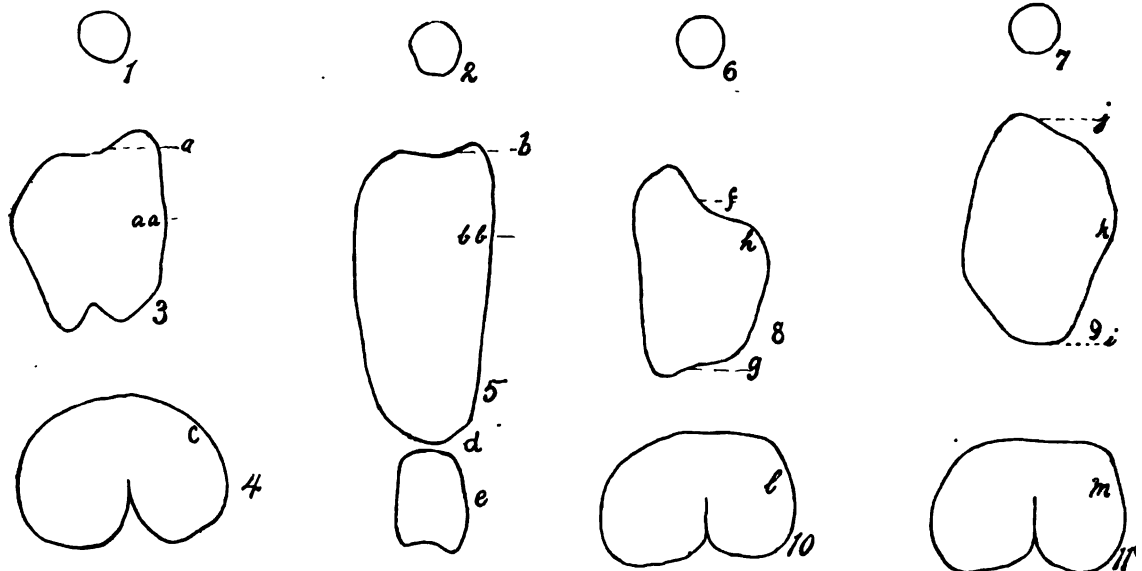
BY HERBERT J. HALL, M.D.,

*Surgical House Officer at the Massachusetts General Hospital.*

THE tracings about to be described are submitted because they show graphically and with a fair degree of accuracy the amount and kind of mobility possible in the spine of a child in the dorsal decubitus. A surprisingly great mobility is demonstrated, and it

tion of the bearing surfaces of the spine and back, and also that there was a corresponding variation in the height of the two arches or concavities, as measured from the table to the skin. Gradual and complete flexion of the head from a position of extreme extension was found in a typical case to change the upper limit of the dorsal area of contact from the level of the sixth dorsal spine to the level of the first dorsal, while the lower limit remained practically unchanged. In the same case, flexion of the thighs, up to ninety degrees varied the lower limit of the dorsal plane from the eleventh dorsal in extension to the second lumbar in flexion. The cervical arch, measured by caliper at about the third cervical spine, was found to be a full inch lower in flexion of the head than in extension.

In order to obtain an available record of a number of cases the following method was pursued: An assistant held the child's head strongly flexed on the



is hoped that the data obtained, besides adding to our general knowledge of the spine, may emphasize the necessity for better fixation than is generally attained in the bed treatment of Pott's disease.

The spinous processes of a child with a presumably normal spine were marked and numbered on the skin, from the sixth or seventh cervical down to the last lumbar. The child thus prepared was laid supine on a table which had been especially prepared with a plate-glass top. An observer looking up from below could plainly see the marked back through the glass, as well as the occiput (which appeared as a small, dark circle) and the buttocks (flattened out and blanched by pressure). There was, of course, another area of contact across the "broad of the back"; and this will be called for convenience the dorsal plane. The concavity of the neck, although not made up entirely of cervical vertebræ, will be termed the cervical arch; and that part of the spine not in contact between the buttocks and the dorsal plane will be mentioned as the lumbar arch.

It was observed that flexion and extension of the head and thighs caused marked variations in the loca-

tion of the bearing surfaces of the spine and back, and also that there was a corresponding variation in the height of the two arches or concavities, as measured from the table to the skin. Gradual and complete flexion of the head from a position of extreme extension was found in a typical case to change the upper limit of the dorsal area of contact from the level of the sixth dorsal spine to the level of the first dorsal, while the lower limit remained practically unchanged. In the same case, flexion of the thighs, up to ninety degrees varied the lower limit of the dorsal plane from the eleventh dorsal in extension to the second lumbar in flexion. The cervical arch, measured by caliper at about the third cervical spine, was found to be a full inch lower in flexion of the head than in extension.

In order to obtain an available record of a number of cases the following method was pursued: An assistant held the child's head strongly flexed on the chest, while with a special glass-marking pencil a small circle representing the occiput was traced on the under side of the glass. The irregular map-like outline of the dorsal plane was traced, and the cordate outline of the buttocks was recorded in a similar manner. The head was then sharply extended, and held in that position, while, without otherwise moving the child, fresh tracings were made representing the new areas of contact. The marks and numbers of such spinous processes as would be useful in describing the tracings were then recorded on the glass. Before erasing the tracings the lines were transferred full size to heavy paper for permanent record and reference.

A corresponding series of tracings were made of the back when the thighs were in extension and at ninety degrees flexion, the head being allowed to assume the most natural position, that is, half-way between flexion and extension. In each case caliper measurements were made of the cervical arch at about the third cervical spine. The lumbar arch was so low and so difficult of access that no accurate measurement of its height could be made.

The ten cases traced were children between the ages of two and ten, all convalescent from medical

<sup>1</sup> Presented by title at the May Meeting of the American Orthopedic Association, at Buffalo, 1896.

diseases or from surgical conditions not known to affect the spine. There was an average change of six vertebral spines in the upper limit of the dorsal plane between flexion and extension of the head, and of five spines in the lower back between extension and ninety degrees flexion of the thighs. The cervical arch varied in height an average of three-quarters of an inch.

This, it will be seen, is equivalent to saying that flexion of the head shortens and lowers the cervical arch, while extension of the head lengthens that structure and increases its elevation. Flexion of the thighs shortens and lowers the lumbar arch. The extent of these changes will be seen in the above averages.

In several instances, including the one shown in the drawing, even the lower limit of the dorsal plane was moderately varied by extreme motion of the head, and although no measurement was made, the height of the lumbar arch was observed to change slightly with motions of the head while flexion of the thighs usually produced a slight involuntary extension of the head with a corresponding raising and lengthening of the cervical arch. An amusing and instructive diversion from the routine consisted in giving the child on the table some object to play with, allowing him to move his legs and arms freely about. This would be an occasion for what might be fitly termed the dance of the spine.

Changes like those recorded above and much greater variations than could be brought about by passive motions were produced with amazing rapidity. The longitudinal and lateral play of the spine at such a time would be a revelation to one who supposes that simple recumbency means even a moderate fixation. The drawings herewith presented are accurately reduced from the original tracings. The curious shapes observed are due to an unimportant flattening out of the muscular and cutaneous back under the weight of the child. If the eye follows the median line of the drawing the change in the length of the spinal arches will be readily appreciated.

Just what occurs in the complicated mechanism of the spine when head and thigh motions are inaugurated we shall not in this connection attempt to make out, but it is not unreasonable to suppose that marked changes in intervertebral pressure may occur, and that the whole articular spine is subject to the influence of these simple, passive motions.

A little experimentation showed that comparative fixation could be obtained by a careful support of the concavities in the cervical and lumbar regions. When these arches were well padded up, motions of the head seemed to be disposed of in the high cervical articulations (occipito-atlantoid), while thigh flexion exerted its influence no higher than the hip-joints.

If the spine is to be fixed in the bed-treatment of caries, it should be fixed, of course, in a desirable position. We may need cervical or lumbar lordosis or we may not, as the case may be. The consideration of that question is beyond the scope of the present paper. We have learned that the spinal arches may rise and lengthen, fall and shorten to such a marked extent as to demand a careful study of the mechanism involved. Further than this it seems probable that our present rather unscientific methods of padding the spine in caries may prove very faulty in the light of future experiments in this line.

The writer wishes to thank the administration and staff of the Children's Hospital for the use of materials and for unfailing courtesy during the collection of the data necessary for these notes.

## Clinical Department.

### A CASE OF TETANUS: SPEEDY RECOVERY AFTER TREATMENT WITH TETANUS ANTI-TOXIC SERUM.

BY H. W. AUSTIN,  
*Surgeon U. S. Marine-Hospital Service.*

H. C., an intelligent boy, seventeen years old, was admitted to the U. S. Marine Hospital at the port of Boston, August 2, 1896, suffering with tetanus. The patient gave the following history:

Health always good. Had been attending school in New York until about two months ago, when he made a trip to the West Indies. Shipped at New York, July 27, 1896, on the schooner *D. J. S.*, bound for Boston.

July 31st. Went on night-watch, eight to twelve, feeling perfectly well; lost his hat, and was for the greater part of the watch without it. "Turned in" at twelve o'clock, and the next morning (August 1st) felt a little stiffness of the jaw, but causing no pain. About seven o'clock the same morning the vessel, making a sudden lurch, threw him overboard; he was picked up uninjured, his clothes changed, and he was put to bed. On arising five hours later he could not move his jaw, it being firmly closed and causing him severe pain in the masseter muscles and in the teeth, which were firmly pressed together. On the evening of August 1st the muscles of the neck became stiff, gradually increasing, accompanied by pain radiating from the condyles of the jaw along the bone to the second molar teeth, and from behind the ear to the clavicle. He also had some pain in his ears, and his throat felt sore in attempting to swallow a little gruel, which he managed to eat through a space where the second molar tooth had previously been extracted. The pain becoming more severe, the captain gave him a few drops of laudanum on the evening of August 1st.

He was brought to the hospital in the ambulance on the morning of August 2d, was given a warm bi-chloride bath, and put to bed. A careful examination revealed a few superficial scratches on one arm and on both legs, caused by handling some lumber, July 27th, at the dock in New York. They were not inflamed, and appeared to be healing. Tincture of iodine was applied to them, and the patient was given about one gramme of potassium bromide and three-tenths grammes of chloral hydrate every three hours, and milk diet was ordered. At this time his jaw was firmly locked, causing some pain, the sterno-cleido mastoid and the muscles of the left arm had a feeling of an occasional electric shock, but no special rigidity could be made out of the latter. A telegram was immediately sent to the Marine-Hospital Bureau for antitoxin, which was received the next day, August 3d, at 3 p. m. Up to this time the patient's condition remained about the same, there being no marked increase in any of the symptoms. The muscles of the back and chest were not involved. Temperature did not rise above the normal, and his pulse ranged from 63 to 58.

August 3d. At 3.30 P. M., 20 c. c. of tetanus antitoxin were injected into the subcutaneous connective tissue on the left side of the chest. At 5.30 there was some pain and a slight redness about the point of injection. At 6.30 pain in the muscles of the jaw and neck had ceased, and in attempting to force the jaws apart the patient exclaimed "There, it moved." A little further manipulation, and the patient could open the jaws about one-eighth of an inch. At eight o'clock all symptoms improved, and the jaws could be opened three-fourths of an inch. The next morning, August 4th, all symptoms had disappeared; the muscles of the jaw were perfectly relaxed. The point of inoculation was a little painful, but the pain was gradually decreasing.

August 6th. No return of symptoms; pulse and temperature normal; patient enjoyed his breakfast, and is apparently in good health. No further medication was given, and the patient was discharged, fully recovered, August 11th.

The slow progress of the disease and the limited number of muscles involved at the end of two days would tend to show that it was not a severe type of the disease, and the rapid recovery following the treatment by tetanus antitoxin is not conclusive evidence that the rapid recovery was due to it.

However, in my opinion, it is additional evidence in favor of giving the treatment further trial.

The antitoxin used was that prepared by the New York Board of Health.

## Medical Progress.

### PROGRESS IN GYNECOLOGY.

BY EDWARD REYNOLDS, M.D.

#### NEPHRO-URETERECTOMY.<sup>1</sup>

KELLY describes three cases of unilateral tuberculosis of the kidney and ureter which he treated by excision of the kidney and the whole ureter at one sitting. The three cases were operated upon by three different methods, and represent to his mind three stages in the evolution of the operation.

In the first case he opened the abdomen from the front and removed the kidney and ureter by a long incision through the peritoneum, running from the seat of the kidney to the bottom of the pelvis, the ovarian artery and vein being cut and tied at about the middle of the incision. At the point in the pelvis where the ureter turns forward under the broad ligament, he was unable to follow it on account of the dense and vascular connective tissue which surrounded it. An attempt to reach the vesical stump of the ureter *per vaginam* was equally unsuccessful and for the same reason. The tissues behind the kidney were perforated with a knife and a strip of gauze laid along the course of the ureter and brought out through the wound so made. The patient made a good recovery from the operation.

In the second case he removed the kidney by an incision in the back just outside of the quadratus muscle, then prolonged the incision downward and forward, passing in front of the anterior superior spine of the ilium and ending in the mons, after running parallel to Poupart's ligament and a little above it. The

peritoneum was pulled forward by the fingers and the ureter followed by sight to its junction with the bladder and there tied and cut. The uterine arteries were tied by a ligature which was passed by means of a needle-carrier and needle, and in the process the external iliac vein was pricked, but the wound was fortunately controlled by a second ligature and no harm resulted. The patient made a good recovery.

In the third case the incision was a horizontal, or slightly oblique cut between the lower ribs and the crest of the ilium, and was made large enough to admit the hand, which was passed into the incision, made to pass back of the peritoneum, seized the kidney and brought it to the surface, where its vessels were tied off and dropped. The ureter was then made tense by traction, and the hand was then urged downward from the same incision by blunt dissection behind the peritoneum, with the tense ureter as a guide, until two fingers were separated from the finger of the other hand in the vagina by the vaginal wall only. This was then perforated with a pair of scissors from below. The ureter was tied and cut at a convenient point, and its vesical end was drawn into the vagina through the hole made by the scissors. The lumbar wound was closed and the patient turned into the lithotomy position, when the vesical portion of the ureter was laid bare by a vaginal incision and the ureter cut off at the point where it entered the vesical walls. The recovery was uneventful.

The three cases were well observed and in all three the diagnosis seems undoubted. The ulterior results are not given.

#### INTRA-PERITONEAL RUPTURE OF THE BLADDER.<sup>2</sup>

George Heaton reports a case of rupture of the bladder in a woman, in which he opened the abdomen, stitched the wound in the bladder by three rows of interrupted Lembert sutures and washed out the abdomen. The patient made a good recovery. He states that although this method of treatment is now recognized by all authorities as the only rational one, but three successful cases have as yet been recorded. He states that the diagnosis is sometimes one of considerable difficulty, and enumerates four characteristic symptoms, any one of which may however be absent, namely:

(1) A history of some form of direct external violence to the hypogastric region when the bladder is distended or moderately full.

(2) Sudden violent burning pain in the lower part of the abdomen, accompanied by the signs of shock and collapse.

(3) A constant or almost constant desire to pass water, with complete inability to do so, or with the passage of only a few drops of blood-stained urine.

(4) And if no active treatment be adopted, gradually increasing abdominal distention, with the evidences of free fluid in the peritoneal cavity.

#### HEMOSTASIS BEFORE HYSTERECTOMY FOR MALIGNANT DISEASE.<sup>3</sup>

W. R. Pryor writes at length upon the anatomy of the internal iliac artery deduced from a series of personal dissections, made with the idea of determining the safest method of rendering bloodless the whole upper genital tract as a preliminary to the excision of

<sup>1</sup> Bulletin of the Johns Hopkins Hospital, Vol. vii, Nos. 59, 60

<sup>2</sup> Annals of Surgery, Vol. xxiii, No. 6, June, 1896.

<sup>3</sup> American Journal of Obstetrics, Vol. xxxiii, No. 222, June, 1896.

advanced malignant disease. He finds the abnormalities and variations so frequent that it is unsafe to trust to any less radical ligature than one applied to the trunks of the internal iliacs on both sides. After careful discussions of the relations of both internal iliac arteries, he gives a description of the technique of the operation: The abdomen is opened by a median excision which extends from the pubes to the umbilicus. The patient is thrown into Trendelenburg's posture, and after working the intestines into the abdomen and protecting them by pads, the bifurcation of the aorta is found with the finger, which then runs down along the right common iliac until its bifurcation is reached, and along the internal iliac artery for one inch. When this point has been found, the ureter can usually be seen as a line of pale fibres crossing the artery beneath the peritoneum. It can be made prominent by gentle pressure just below the artery until it fills with urine [or by previously introduced ureteral catheters].

The peritoneum just at the side of the ureter is then picked up and nicked with scissors, and no further dissection is done. A blunt aneurism needle is then worked gently around the vessel from above downward, and without inward (the iliac vein lying behind and outside the artery), the ureter being meanwhile held aside. The ligature is then tied tightly enough to occlude the vessel but without rupturing its coats, and the peritoneum is stitched together over the ligature. The rectum is then drawn to the right,—the left internal iliac found and tied in the same manner. The ovarian arteries are then secured close to the pelvic brim, and the operation to be done is decided by the character of the disease. Pryor believes that this ligation will not only permit a safer and more extensive extirpation of the uterus, broad ligaments and vagina, than could be done without it in moderately advanced malignant disease, but also thinks that after the removal of the uterus or the centre of a recurrent nodule in a hysterectomy scar, the deprivation of nutriment due to the tying of the vessels will result in a shrinkage of otherwise non-operable disease, and in a consequent prolongation of life. He states that ligation of the internal iliacs controls all the large intra-pelvic vessels except the inferior mesenteric, which supplies no glands other than those in the meso-rectum, and has no anastomoses other than with the hemorrhoidal branches of the pudic arteries, and those small. He quotes two cases in support of his position: in one, done ten years ago, the internal iliacs were tied for a double gluteal aneurism. The patient died from probable peritonitis and suppression of urine, which last Pryor thinks due to the effect of ether upon chronic renal disease. The second case was one in which Kelly ligated both internal iliacs for the control of an alarming hemorrhage during a hysterectomy done for malignant disease; this patient recovered with a vesico-vaginal fistula, and upon her reappearance to have the fistula operated upon, after a careful examination not the slightest trace of malignant disease could be found, although a large portion of the disease had been left at the time of the operation.

#### CONTINUOUS INCISION IN HYSTERECTOMY.<sup>4</sup>

Kelly describes a new method of supra-vaginal amputation of the uterus for which he claims the following advantages which he describes:

<sup>4</sup> Bulletin of the Johns Hopkins Hospital, Vol. vii, Nos. 59, 60.

- (1) Opening the abdomen.
- (2) Ligation of the ovarian vessels near the pelvic brim, either on the right or on the left side, clamping them towards the uterus, and cutting between.
- (3) Ligating the round ligament of the same side near the uterus, cutting it free, and connecting the two incisions, in order to open up the top of the broad ligament.
- (4) Incision through the vesico-uterine peritoneum from the severed round ligament across to its fellow, freeing the bladder, which is now pushed down with a sponge, so as to expose the supra-vaginal cervix.
- (5) Pulling the body of the uterus to the opposite side to expose the uterine artery low down on the side opened up. The vaginal portion of the cervix is located with thumb and forefinger, and the uterine artery, seen or felt, is tied just where it leaves the uterus. It is not always necessary to tie the veins.
- (6) The cervix is now cut completely across just above the vaginal vault, severing the body of the uterus from the cervical stump, which is left below to close the vault.
- (7) As the last fibres of the cervix are severed or pulled apart, while the body of the uterus is being drawn up and rolled out in the opposite direction, the other uterine artery comes into view and is caught with artery forceps about an inch above the cervical stump.
- (8) Rolling the uterine body still farther out, the right round ligament is clamped, and cut off, and lastly the ovarian vessels are clamped at the pelvic brim, and the removal of the whole mass, consisting of uterus, tubes and ovaries, is completed.
- (9) Ligatures are now applied in place of the forceps holding the uterine artery, round ligament and ovarian vessels; if the surgeon prefers, these may be tied as they are exposed without using forceps.
- (10) After the enucleation the operation is now finished in the usual way, (a) by closing the cervical tissue over the cervical canal, and then, (b) by drawing the peritoneum of the anterior part of the pelvis (vesical peritoneum and anterior layers of broad ligaments) over the entire wound area, and attaching it to the posterior peritoneum by a continuous catgut suture.

#### NEW METHOD OF VAGINAL FIXATION.<sup>5</sup>

Wertheim calls attention to the serious complications of pregnancy and labor after vagino-fixations, where the normal enlargement of the uterus is interfered with. The same disturbances have been noted after ventro-fixation, though spontaneous delivery at full term occurred in about 85 per cent. of the cases collected by Milander. The latter notes, however, that these were absent in all cases in which the round or broad ligaments were shortened or attached to the abdominal wall. It occurred to the writer that the evil results of vagino-fixation might be avoided by fastening the round ligaments to the anterior vaginal wall. The steps of the operation are as follows: The vesico-uterine pouch is incised transversely as widely as possible. The uterus is anteverted, the round ligaments exposed and a loop of each is pulled down, the cervix being drawn backward and the forefinger passed over the fundus. Counter-pressure above the symphysis assists in the anteversion and renders it unnecessary to seize the fundus with a vol-

<sup>5</sup> Centralblatt für Gynäkologie, 1896, No. 10.

sellum. The loops of the ligaments can be drawn down and held with ligatures without bringing the uterus into the vagina. The ligaments can be secured intra-peritoneally, when each loop is sutured to the outer angle of the vesico-uterine fold of peritoneum as the wound is closed. More permanent fixation, however, is obtained by attaching the ligaments to the corresponding angles of the vaginal wound, after which the peritoneum and vagina are closed separately. The immediate results of the operation are excellent, the uterus being in normal position, while the usual dislocation of the bladder is absent, since the fundus uteri does not rest upon it in such a way as to prevent its expansion. There is no danger of injuring the ureters. Since no cases of pregnancy after this operation have yet been reported, the crucial test of its value is wanting, but it seems fair to infer that the disturbances following Mackenrodt's method will be absent.

It is important to note that the ligament should not be seized directly at its origin, but at a point an inch beyond it. It is possible to draw out from three to five and one-half inches of the ligament, though an inch is sufficient in vagino-fixation. The writer further suggests that shortening of the round ligaments can also be readily performed in the same way by pulling them down from three to five inches and attaching the loops thus formed to their uterine origins. The uterus is thus elevated as well as anteverted, precisely the same as in Alexander's operation. The vesico-uterine pouch is then closed, the bladder is re-attached to the cervix, and the vaginal wound is sutured. This procedure presents some advantages over vaginal fixation of the round ligaments, since the bladder remains in its normal position and relations, the ligaments can stretch in a natural way during pregnancy, and the uterus is not only anteverted, but is elevated in the pelvis. As compared with Alexander's operation, a single wound is made instead of two, there is no external scar, the ligaments are seen at their origin, where they can be easily identified, and the vaginal method is equally applicable to cases of retroflexion with fixation.

#### VAGINO-FIXATION OF THE UTERUS.

Dührssen, after enunciating his disapproval of that form of vagino-fixation in which the whole anterior uterine wall is sutured into the anterior vaginal incision, goes on to report 148 vagino-fixations with one death and one relapse. He advocates a transverse incision through the anterior vaginal wall to which he sutures the peritoneum of the utero-vesical space, after which he stitches the anterior surface of the uterus to the vesical peritoneum.

The uterus is then fixed only by peritoneal adhesions, and maintains its anterior position without any material alteration of its relation to the bladder. He has observed a large number of pregnancies after this operation without serious ill results.

#### CRITICISM OF VAGINO-FIXATION.<sup>6</sup>

Leopold states that he has always been opposed to the operation since it substitutes for the retroflexion a position of the uterus which is no better than the former. The relations of the uterus to the bladder are entirely abnormal, the portio is fixed in an unnatural position, and unless Douglas's pouch is first

opened and adhesions are thoroughly separated, it is useless. Moreover, recent reports concerning the serious complications arising in cases of pregnancy in vagino-fixed uteri furnish a powerful argument against the operation.

The writer has been perfectly satisfied with the ultimate results of ventro-fixation, especially during pregnancy and labor. Most of the bad results reported have been due to the fact that either the uterus was fixed in an improper position (especially too high up), or that non-absorbable sutures were used. He employs a single suture on each side, introduced inside of the insertion of the tube, and fixes the uterus not more than half an inch above the upper border of the symphysis. Although not always successful in his hands, he thinks well of Alexander's operation. He adds the caution that greater care should be exercised in deciding whether operative treatment is indicated in an individual case of retroflexion, since the association of various local and general symptoms with retrodisplacement is by no means a proof that the former are directly due to the latter.

#### GNORRHEA IN WOMEN FROM A MEDICO-LEGAL STANDPOINT.<sup>7</sup>

Neisser discusses this important question with especial reference to the importance of the diagnosis, which, he affirms, cannot be positively made without the aid of the microscope. A secretion may be present which bears an exact resemblance, macroscopically, to gonorrheal pus, but contains no cocci, or, in fact, any bacteria whatever.

Moreover, it is impossible to determine the time at which infection occurred, since its course differs so widely in different subjects. When the cervical canal is affected, but not the urethra, symptoms may be absent. The writer denies the truth of the statement that obscure acute gonorrheal infection in the female may cause a chronic discharge in the male; the gonococci always possess the same virulence, and when they came in contact with healthy mucous membrane produce an acute inflammation. This explains the violent gonorrheal attacks in newly-married women, whose husbands regard themselves as entirely cured, and also the similar acute infection of men after intercourse with females whose physicians had discharged them as free from disease. In both instances the secretion is found to contain a few scattered cocci, which are only found after a long search. In the chronic cases the characteristic appearance of the gonococci within cells is often wanting, and the culture-test is frequently unsatisfactory. In short, the microscopical diagnosis is often exceedingly difficult. Still, this is the only one which should be admitted as positive in a court of law.

#### NEW OPERATION FOR PROLAPSEUS UTERI.<sup>8</sup>

Jacobs describes the following operation, which he calls calloplexia ligamentaire. It is applicable only in cases of women who have passed the climacteric and have been weakened by repeated pregnancies. After thorough disinfection of the vagina and curettage, the vagina is tamponed with gauze, and the abdomen is opened with the patient in Trendelenburg's posture. The uterus is amputated in the usual manner at a point just above the os internum, a deep wedge-shaped

<sup>6</sup> Centralblatt für Gynäkologie, 1896, No. 6.

<sup>7</sup> Centralblatt für Gynäkologie, 1896, No. 14.

<sup>8</sup> Loc. cit., 1896, No. 15.

ment on both of them in this way, but after reading an article which dwelt upon the very great degree of pain and headache that resulted from the draining off of the spinal fluid I did not do so. Both died and the post-mortem examinations showed that the diagnoses were entirely correct, but still it would have been valuable to have substantiated them by lumbar puncture during life.

DR. MORSE: I think we are very much indebted to Dr. Wentworth for demonstrating the safety of this method of diagnosis and for calling attention to the importance of the turbidity of the fluid. I have only had the opportunity of examining the fluid in two cases, one normal and one of tubercular meningitis. The results agreed with those of Dr. Wentworth. The fluid from the normal case, which had symptoms pointing very strongly to meningitis, but which later cleared up, was perfectly clear and contained no cells on microscopic examination, while the fluid from the case of tubercular meningitis was turbid and contained many polynuclear leukocytes. From my experience in that case I can corroborate Dr. Wentworth's statement as to the difficulty in finding tubercle bacilli in the fluid. I spent the whole afternoon and failed to find them, while one-tenth of a cubic centimetre injected into a guinea-pig gave positive results.

#### AMERICAN ORTHOPEDIC ASSOCIATION.

TENTH ANNUAL MEETING, BUFFALO, MAY 19-21, 1896.

(Concluded from No. 11, p. 270.)

#### SECOND DAY (CONTINUED).

#### A THEORY OF THE ULTIMATE ETIOLOGY OF DEFORMITY, AND ITS PRACTICAL APPLICATION.

DR. ROYAL WHITMAN said that in the process of evolution the erect posture had been comparatively acquired, and that it was an attitude difficult of acquirement and difficult to maintain. The ordinary so-called postural deformities were then explained. The flexion and contraction deformity, he said, was of special interest to the orthopedic surgeon. If one accepted the morphological theory of its etiology, it would be evident that as the erect posture was a newly-acquired attitude, so also the uses by the limbs proper to that posture, were newly acquired. Complete extension of the limb in the support of this posture required not only the greatest expenditure of nervous energy, but also the greatest strain upon the joint surfaces, and when the ability to assume this attitude became impaired, the affected member became flexed — in other words, it involuntarily assumed an attitude common to the lower or quadrupedal form of locomotion. Flexion was an evidence of unbalanced nervous influence, and of preponderance of power of the lower or reflex centres. In joint disease the cause was local irritation and consequent muscular spasm; in the second, the inhibitory influence of the higher centre was impaired or removed. The erect posture was an evidence of the higher position of man in the scale of evolution. When the controlling force of the higher centre was directly or indirectly impaired, the more difficult and newly-acquired attitudes were disused, and the affected part fell backward toward the type from which it had been differentiated.

#### FURTHER OBSERVATIONS ON THE CAUSE OF THE LIMP OF HIP-JOINT DISEASE.

DR. HARRY M. SHERMAN, of San Francisco, read a paper with this title. He said that tuberculous bone disease resulted in a wasting of the osseous trabeculae and the development of an area of structural weakness, usually in the neck of the femur. In hip disease the effort is made to bring the centre of gravity of the body as nearly as possible over the head of the femur, so as to relieve the strain put upon the structurally weak spot. This theory assumes that there is a "bone sense," comparable to the muscle sense. The speaker then went on to describe by the aid of blackboard diagrams, his mechanical theory of the causation of the limp of hip-joint disease. He endeavored to show that the keynote to the subject, from a mechanical point of view, was the fact that the head and neck of the femur constitute a column and bracket, or what is known in mechanics as a "cantilever," and that these anatomical members were, therefore, governed by the same mechanical laws as control the operation of the "cantilever."

DR. WIRT said that he believed the author was in the main correct in his theory, but he would remind him that when running, the femur supports the weight of the body, *plus* the momentum.

DR. A. M. PHELPS said that he was of the opinion that the capsule of the joint was swollen with tuberculous material, and that as a result, in order to relieve intra-articular tension the patient pulled the limb into a partially flexed position.

DR. BRADFORD said that in some cases the lack of free motion in the joint would account for part of the limp. In cases of cured hip disease, with the limb much adducted, the limp was often due to the effort of the patient to balance himself.

The PRESIDENT said that the weak point in the author's argument was the assumption of voluntary adaptation of the limb. If this were voluntary, one would certainly not expect it to occur in very early infancy, and yet it was known that the limb assumed such a position in these patients.

DR. WEIGEL said that he would like an explanation of the fact that in the early stage, there would be a limp even though there had been no swelling of the joint. Again, Dr. Judson had shown that patients who had recovered from hip disease, and who still limped, could be trained until the limp was scarcely noticeable.

DR. SHERMAN said that in running the foot-prints were very nearly in a straight line, thus bringing the point of support nearer to the centre. This was not a voluntary, but a reflex act. He believed it was rare for hip-joint disease to begin in the capsule. The recovered cases which walk without limp are those in which there is ankylosis between the bones.

#### FEMORAL OSTEOTOMY FOR CORRECTION OF HIP DEFORMITY IN ADULTS, WITH A REPORT OF CASES.

DR. A. R. SHANDS, of Washington, D. C., read a paper in which he advocated Gaunt's intra-trochanteric osteotomy. He preferred to do this operation with Gaunt's osteotome having a blade only three-fourths of an inch wide. The only dressing was sterilized gauze retained by adhesive plaster, and a plaster-of-Paris spica applied after a proper position of the limb had been secured.

DR. PHELPS said that he would advise in a case of double hip-joint disease with ankylosis, the performance of excision, being careful to remove enough bone to prevent ankylosis. He had recently adopted a novel method of securing motion at the joint, namely, cutting through just above the lesser trochanter; bringing down the limb by force; cutting off about three-fourths of an inch of the femur, and then inserting a piece of fascia between the ends of the bones.

DR. SHERMAN said he would limit this subtrochanteric osteotomy to cases in which there was no motion between the femur and pelvis.

DR. W. R. TOWNSEND referred to several adult cases, coming under his observation, where an excellent result had been obtained by operation for bony ankylosis.

DR. GOLDTHWAIT also cited several adult cases, and remarked that the limb had been put up with ten or fifteen degrees of flexion so as to make it more comfortable for the patient when sitting down.

DR. J. E. MOORE said that while the result was not so likely to be good in cases where there was some motion, he would not confine operation entirely to those cases in which there was complete bony ankylosis.

#### REPORT OF CASES OF OSTEO-SARCOMA OF THE HIP.

DR. ARTHUR J. GILLETTE, of St. Paul, reported three cases illustrating the difficulties in differential diagnosis where there was osteo-sarcoma of the hip. Deformity might not occur for months after the onset of the disease, and there would be in all probability no fixation, very little atrophy, and little or no shortening.

DRS. R. H. SAYRE, SHERMAN and MOORE also reported similar cases.

#### TUBERCULOSIS OF THE WRIST AND CARPUS.

DR. JAMES E. MOORE, of Minneapolis, read a paper on this subject. He said that wrist-joint disease comprised about five per cent. of all tubercular joint diseases, and occurred most commonly in persons between fifty and sixty years of age. The disease was insidious in its development, but the diagnosis could be easily made by the swelling, atrophy, flexion and the peculiar position of the thumbs and fingers. The tendon sheaths were often involved. Children often recover from the joint affection, but rarely live to maturity; in adults, it almost invariably ends in phthisis. For children, enforced rest of the joint, by means of plaster-of-Paris dressings, is of service, but for adults it is only applicable to recent cases, and should then be combined with injections of iodoform emulsion. Where there were sinuses and evidence of suppuration, the choice lay between complete excision and amputation. Amputation was often the most conservative treatment. The author did not favor early excision, because the functional results were bad, and as a life-saving measure it could not compare favorably with amputation. When the disease was well-marked and progressing rapidly, when there was well-marked wrist-joint disease with incipient phthisis, and when with the disease there was advanced pulmonary tuberculosis, he would recommend amputation.

DR. MCKENZIE said that he had had some very good results in this class of cases from the use of injections of iodoform and glycerine. He had not observed severe reaction following this treatment, indeed in

some instances the existing pyrexia had been observed to diminish after the injections.

DR. SHERMAN commended amputation as the best treatment in cases of severe disease of the wrist.

DR. GILLETTE said that some of those who had spoken had implied that these patients suffered much pain. His own impression had always been that wrist-joint disease was associated with very little pain.

DR. MOORE, in closing, said that occasionally pain was prominent. In one case he had done an amputation because of the intense pain, and the result, both as regards prolongation of life and increased comfort, had justified the amputation.

#### MECHANICAL TREATMENT OF INGROWN TOE-NAIL.

DR. HENRY LING TAYLOR, of New York, read a paper, in which he recommended the following method, modified from that devised by Mr. Masters, of England. A flat strip of silver one one-hundredth of an inch thick, and one-eighth of an inch wide, and one inch long, is bent into the shape of a fishhook. The toe having been cleansed with peroxide of hydrogen, and moistened with a solution of cocaine, the hook is inserted under the lateral edge of the nail so that the shank of the hook curves over the side of the toe, and lies close to it. The greater the ulceration, the less the pain in inserting the hook. It is retained in place by adhesive plaster or a bandage. The hook not only protects the flesh from the nail, but it exerts a lifting action on the nail. After a few hours the patient suffers no inconvenience from the hook, and in a few days the swelling subsides and the granulations become more healthy. It is well to wear the hook for several weeks after the tissues have healed in order that they may become sufficiently hardened. The method, the speaker said, was applicable to the severest cases.

#### THIRD DAY.

#### MECHANICAL SUPPORT FOR FLAT-FOOT.

DR. J. C. SCHAPPS, of Brooklyn, described a method of making steel soles for flat feet. On hammering out by hand a steel sole to conform to the arch of a well-developed adult foot, it would be observed that the anterior and posterior halves were nearly alike. Having modified the sole-plate so as to make these the same, it was found that the shape resembled that of a portion of the convex surface of a cone, with the apex directed toward the outer side of the sole, and the base toward the inner side of the foot. From this plate, plaster casts were made, and these casts served as models from which iron dies were manufactured. With such dies any mechanic could make steel plates, from which soles were easily cut out for right or left foot, high or low, large or small feet. A contour of the patient's foot is taken on cardboard and trimmed to fit the sole of the shoe in front, outer side and back, and is made wide enough to allow of it coming well up on the inner side of the foot of the arch. This pattern is used to correct the rough outline of the foot taken on the plate itself. The curved line representing the inner edge of the arch of the plate should be located just below the scaphoid and the head of the astragalus. The inner flange of the plate requires careful shaping—it should be nearly vertical as the patient stands on the plate. Having fitted the plate to the foot and the shoe, it should be covered with vulcanized rubber.



## SOME APPARATUS FOR THE TREATMENT OF POTT'S DISEASE.

Dr. Schapps also presented a wheel-cot which he had found useful for the purpose of maintaining uninterrupted recumbency with regulated pressure in Pott's disease. Traction could also be applied. He said that the energy required to hold the spine rigid and the lower limbs in a continuous state of elastic tension to break the shock to the spinal column, exhausted the general and local recuperative forces. It was injurious, in his opinion, to interfere with the respiratory movements of the chest and abdomen. The sternum should be used as a base from which to make forward pressure on a dorsal kyphos. It was also apparent that both the posterior or spinal, and the anterior or sternal supports of the upper mass should be kept under it, and lateral pressure on the chest avoided. For the treatment of Pott's disease in the upright position, the author used a combination of the Taylor brace posteriorly, and anteriorly a rigid, light support which made pressure only on the parts which could convey it to the spine without interfering at the same time with respiration.

## THE TREATMENT OF POTT'S PARAPLEGIA.

DR. LE ROY W. HUBBARD, of New York, in discussing this subject and reporting two cases, asked if it were possible to reduce the period of paralysis. After reviewing the history of the treatment of this very common complication, and reading replies received from a circular letter that he had sent to the members of the Association, he concluded that if immediate efficient mechanical support were applied to the spine, absolute recumbency enforced until power returned, and a general tonic plan of treatment were carried out, there would be a complete cure in almost every instance, and in the majority, in a short time. Operative treatment was rarely called for.

DR. KETCH said that his experience did not show a natural tendency toward recovery in cases in which the paraplegia affected the arms.

DR. WEIGEL said that it had been his lot to deal more especially with adult cases, in whom the prognosis was relatively less favorable. He did not think any one could give even an approximate idea regarding the average duration of Pott's paraplegia.

DR. RIDLON said that his experience had been that the cases in which the sphincters were involved gave the worst prognosis. In one case in which the arms had been affected recovery had been quite rapid.

## CONGENITAL DEFECTS OF THE LONG BONES.

DR. B. E. MCKENZIE, of Toronto, presented a number of specimens and reported upon ten cases of such defects.

## CONGENITAL CLUB-HAND.

DR. C. E. THOMSON, of Scranton, present by invitation, reported a successful operation in a case of this kind, occurring in a girl of thirteen, who belonged to a rather remarkable family of children with congenital deformities.

## THE TREATMENT OF CLUB-FOOT.

DR. A. M. PHELPS, of New York, said that the treatment of club-foot by manipulation and retentive dressings should be begun at the earliest possible mo-

ment, and when after a reasonable time the progress by this method became very slight, all parts offering resistance to reduction of the deformity should be cut and the limb put up in a super-corrected position. Out of 343 operations he had had only five per cent. of relapses, and in the last series—182 cases—there had been no mortality.

## TWO CASES OF DISLOCATION OF THE PATELLA TREATED BY OPERATION.

DR. JOEL E. GOLDTHWAIT, of Boston, presented such a report.

## TORTICOLLIS DUE TO ADENOID VEGETATIONS AND CHRONIC HYPERTROPHY OF THE TONSILS.

DR. ARTHUR J. GILLETTE, of St. Paul, reported three cases, two of them being congenital. In one of the cases, the removal of the adenoid vegetations was sufficient without any division of the sterno-mastoid, or other treatment, to effect a prompt cure.

## A REPORT OF SOME CASES OF UNUSUAL CONGENITAL DEFORMITIES.

DR. JOHN RIDLON, of Chicago, presented reports and photographs of a number of such cases.

## A REPORT OF A FAMILY OF ANOMALIES,

by DR. L. A. WEIGEL, of Rochester.

DR. SAMUEL KETCH, of New York, was elected President of the Association for the ensuing year.

## Recent Literature.

*The Condition of Radical Cure in Cancer* (with cases). *Tumors of the Breast which are "Dispersible" without Operation* (with cases). *The Conversion of Benign Tumors into Cancer. The Practical Outcome of Recent Researches on Cancer.* By HERBERT SNOW, M.D., London, etc. Pp. 63. London: J. & A. Churchill. 1895.

This is a presentation in book form of several monographs written by the author at different times during the past three years. The first paper seeks to represent the principles which should guide the surgeon in combating malignant disease contrasted with former methods. The second shows the limits of operative treatment. The third calls attention to a point once recognized but now almost forgotten. The fourth, and concluding section, treats of secondary distribution of cancer to bone marrow, the value of opium in treatment, and the relation between primary and secondary malignant growths.

*Blind Leaders of the Blind; The Romance of a Blind Lawyer.* By JAMES R. COCKE, M.D. Boston: Lee & Shepard. 1896.

The author of this book was born blind. Notwithstanding the obstacles which such a condition placed in his way he succeeded in obtaining a medical education, supporting himself in great measure in the meantime, and is now practising medicine in Boston. Under the guise of a story this book is evidently in many respects a record of personal experiences, if not an autobiography. With this key in mind it may be read with added interest.

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SOME STATISTICS REGARDING MEDICAL  
EDUCATION.

THE United States Bureau of Education publishes facts of much interest regarding the changes and growth which have taken place in medical education during the last years. Many of these facts are worthy of serious reflection, giving as they do an index of what may be expected in the future.

Comparison is made between conditions, as they were in 1883-84 and as they were ten years later, 1893-94. It appears that at the earlier date there were eighty-eight regular schools of medicine in existence, as against one hundred and nine in 1893-94. The homeopathic schools, in the same time, increased from thirteen to nineteen and the eclectics remained unchanged in number, nine at each date. Certain institutions ceased to exist during the decade, twelve in all, which gives one an idea of the transitory character of a fairly large proportion of medical establishments. Nor is the mere number of schools a good criterion of medical progress, since many of them merely maintain a struggling existence, poor in students and therefore weak financially, if not intellectually.

A better index is the number of students enrolled, and figures taken over the same decade, 1883-84 to 1893-94, are more suggestive of the true state of affairs. The students in regular medical schools in 1883-84 numbered 10,600; in 1893-94 they numbered 17,601, an increase of 66 per cent. Students in homeopathic schools at the first date were 1,267; at the second, 1,666, an increase of 31.5 per cent. The eclectic students numbered essentially the same at the two periods, 767 to 803, an increase of but 4.7 per cent., and, as already stated, there was no increase in the number of their schools during the ten years. In other words, the number of regular medical students increased more than twice as fast as homeopathic students, and more than fourteen times as fast as the eclectics.

The report from which we have quoted the above figures raises the query as to how the 8,000 new doctors graduated each year are to earn a livelihood, by the practice of their profession. The query is certainly a natural one, and one to which it is practically important to attempt an answer. In the first place unquestionably many of these students are diverted into other lines of work immediately, or soon after completing their terms of study. But for those who are left and persist in the course they have marked out for themselves, the competition in large cities becomes each year more keen and the time is continually increasing before a young physician may regard himself as safely established in his practice. Two possible alternatives at once suggest themselves as means of a more speedy if not ultimately more munificent means of livelihood. The first, which the better men from our larger schools are slow to adopt, is a settlement at a considerable distance from cities. There must be room for country doctors, who are trained in modern medical methods, an opportunity which is probably now more open than it has ever been before, since the tendency to concentrate in cities has become more and more pronounced. The other loophole of escape from enforced idleness is special scientific work in almost any line of medical research. There is actually a lack at present in this country of competent men to fill positions of a teaching or investigating character. It is true that the salaries attached to such positions are absurdly small and inadequate to qualify a mercenary ambition, but it is hardly to be questioned that a readjustment will take place in the not distant future, under which meritorious scientific work will meet with the reward it deserves. If the overcrowding of the practice of medicine may conduce to this end by turning men recently graduated into fields of investigation, we can in no way regret the increasing number of our graduates. Statistics show that the ratio of medical students to population in the United States is about twice what it is in European countries, but no doubt the average education of the American student is inferior to that of his foreign brother, and it is equally probable that a much larger proportion of our American students give up their undertaking before they have become definitely established as practising physicians. In any case there seems to us no cause for alarm. Knowledge is growing in every department at a rate which will surely keep all the worthy medical men busy, never mind how many are forthcoming, and of the unworthy ones, medicine, as a profession, certainly needs less now than ever before. There never has been a time when medicine offered more possibilities to any man who approaches it in the proper spirit, nor has the much-quoted proverb of "room at the top" ever had a more evident meaning, and yet on every side we hear the complaint from the laity and from the physicians themselves that the profession is overcrowded, and that penury and want face the young practitioner. It is beyond measure difficult to free ourselves from the idea that medicine, as a

profession, consists only in its practice. No doubt, regarded from this point of view it is crowded; that is a sufficiently self-evident fact, but from the broader standpoint of medicine as a scientific calling, in which practice enters simply as an element, there is absolutely no crowding at all. The whole field of research in special lines lies absolutely open, and the pity is that so few avail themselves of the opportunities which are everywhere offering.

The solution of the problem of overcrowding must lie in the clearer recognition of the fact that medicine is not hedged in by any narrow boundary lines, but grants opportunities of work to an extent not found in any other profession, work which is sure to become more and more remunerative, as the public sees its growing usefulness. Already there is sufficient evidence of this. Laboratories are everywhere being established. With their establishment comes at once the necessity of directors and assistants who are skilled in the particular line of work which any given laboratory is to subserve. Positions are forthwith created to which adequate salaries must of necessity be attached, and we have at once, perhaps a small, but still a definite means of escape from the dreaded crowd of practitioners. Such positions are at present hard to fill, but it cannot for a moment be open to doubt, that the next ten years will see a score of applicants for every place of scientific trust. Even now it is quite possible to discern a beginning change of front on the part of the younger generations of medical men. More and more are training themselves for work, which they see some one must do, and many, as they leave their three or four years of medical study, find a position of immediate usefulness in some one of the manifold directions, in which skilled work is required.

The future is altogether encouraging with the limitless outlet which the scientific side of medicine offers. Were it not for this we might well bewail the thousands of physicians who are crowding into the profession each year. As it is, the more the better, provided they will but realize that their field of usefulness lies or may lie beyond the details of their daily practice.

#### MEDICAL NOTES.

**THE FOURTH INTERNATIONAL CONGRESS OF HYDROLOGY, CLIMATOLOGY AND GEOLOGY** will be held at Clermont-Ferrand, Puy de Dôme, France, September 28th to October 4th. The general secretary of the congress is Dr. E. Fredet.

**MENSTRUATION IN ESKIMOS.**—Dr. Cook, who was with the Peary expedition, says the Eskimo girls do not begin menstruating until they are eighteen or twenty years of age. It has, however, been stated, that they may conceive and bear children at a much younger age, a fact which has been adduced to show that there is no necessary connection between ovulation and menstruation.

**ILLINOIS LICENSES MIDWIVES.**—The Illinois State Board of Health at its meeting in July, passed a resolution allowing midwives to practise in Chicago. Applicants will have to submit to a thorough examination and give satisfactory proof that they are capable of doing their duty, and file a bond with the board.

**PROFESSOR RÜDINGER'S DEATH.**—Dr. Nicholas Rüdinger, Professor of Anatomy at Munich University, died on Monday last at Tutzing in Bavaria. Dr. Rüdinger was Professor of Anatomy at the Anatomical Institute at Munich, having held the post for sixteen years.

**THE TREATMENT OF TABES DORSALIS.**—Following his theory of the close relationship of syphilis and tabes, Erb, in a recently published brochure, urges the use of mercury and iodide in the treatment of the latter affection. Especially does he consider this treatment indicated in those cases which follow soon after the syphilitic infection, and in those in which syphilis is still active. He naturally regards it of less efficacy in those cases in which a long interval has intervened between the syphilis and the onset of the tabes, and contraindicated when it has already been faithfully employed or the stomach is intolerant.

#### BOSTON AND NEW ENGLAND.

**THE PROPOSED HOSPITAL AT RUTLAND, MASS.**—At a recent hearing before the Governor and Council, the various arguments of persons interested in the construction of the new hospital for tubercular patients were presented. Various complications have arisen as the project has grown, chiefly relating to the question of a means of sewage which will be satisfactory to the State Board of Health. The hospital is to be located within the Metropolitan Water-Supply District. It appears that the trustees had made arrangements for a certain system of drainage disposal, which did not meet with the approval of the Board of Health. The State Board suggested another system, the expense of which would be about \$12,000. This the trustees felt to be too great a drain on their resources, since the entire appropriation provided for the hospital was \$150,000. Mr. Bailey, counsel for Boston, maintained that a hospital situated at the proposed spots, namely, on the water-shed of the lower Nashua River or on the dividing-line between that shed, and the shed of the Ware River, would be a constant menace to the health of the community, owing to the probable pollution of the water-supply. He believed that a system of intermittent downward filtration, undoubtedly the best under the circumstances, would still not assure absolute freedom from contamination. Mr. Pillsbury, representing the State Board of Metropolitan Water-Supply, was likewise of the opinion that a safe disposal of the sewage from such a hospital as proposed was entirely out of the question. Chairman Hammond, of the trustees, stated it as his belief that the sewage could be safely disposed of, and suggested a temporary system, which would permit the building of the hospital to go on, and which might be super-

ceeded by a better one, as occasion demanded. The matter has been postponed for further discussion.

**MASSACHUSETTS EMERGENCY AND HYGIENE ASSOCIATION.** — Under the "Department of Instruction to Attendants," it is stated in a recently published circular that "The purpose of this department is the training of women to be attendants in the care of convalescents, feeble, elderly persons, little children and chronic cases." The idea herein contained is twofold, first, to give women who are unable to give the time required at a regular nurses' training-school, an opportunity to learn enough regarding the care of the sick, to gain for themselves a moderate means of support in cases of the above character, and, secondly, to provide attendants at moderate cost in those families, where a trained nurse, for financial reasons, would not be available. It is designed to give women between the ages of twenty and forty, an opportunity, by means of systematic instruction, to fit themselves as trained attendants, the instruction to be partially didactic and partially practical in the homes of the poor. The tuition fee is placed at a very reasonable amount, fifteen to twenty dollars, and on graduation pupils are permitted to register for situations at the Bureau of Nurses, 19 Boylston Place. No attendant is to be allowed to charge more than \$7 a week (and living) during her first year of service. The instruction is under the charge of Dr. Anna G. Richardson and Dr. E. W. Dwight is Chairman of the Committee on Instruction. The plan, as outlined above, should certainly succeed, and fill a real want in the community.

#### NEW YORK.

**FLOATING HOSPITAL, ST. JOHN'S GUILD.** — The St. John's Guild has discontinued the trips of its floating hospital for the season. During the past summer, from July 8th to September 8d, the excursions were made on every week day (with the exception of four, when they had to be omitted on account of rainy weather), and 46,253 women and children were carried on them. In the wards of the Guild's seaside hospital at New Dorp, Staten Island, 700 severely sick children were treated, without a single death.

**AN ANNEX TO THE SLOANE MATERNITY HOSPITAL.** — An annex, seven stories in height, is being built to the Sloane Maternity Hospital, which stands on the same lot as the College of Physicians and Surgeons and the Vanderbilt Clinic. It is expected that it will be completed about the first of October, and it will increase the capacity of the institution from 75 to 275 patients.

**SINGLE HEAD FOR NEW YORK HEALTH DEPARTMENT.** — In the proposed charter for the greater New York there is to be a single head of the Health Department, to be known as the Health Commissioner. He is to be appointed and can be removed by the Mayor, and can at any time be called upon by the Mayor for a report of his work. The two proposed bureaus in the department are to be presided over by a sanitary superintendent and a registrar of records

respectively. The first officer must, at the time of his appointment, have been for at least ten years a practicing physician, and for three years a resident of the City of New York. The proposed bureaus and their heads are identical with those now in existence, and the powers and jurisdiction of the department are not extended; while the present sanitary code of New York is retained. Under the present law the Board of Health, which now consists of the President of the Board of Police, the Health Officer of the Port, and two officers known as Health Commissioners, can be removed only under charges to be reviewed by the Supreme Court. Under the proposed charter the main office of the Health Commissioner is to be in the Borough of Bowling Green, and he may establish such branch offices in the various other boroughs of the consolidated city as may be deemed necessary. In the Borough of Brooklyn he is also authorized to appoint a deputy commissioner and sanitary superintendent if he sees fit.

**QUARANTINE STATION AT PERTH AMBOY.** — Dr. A. H. Doty, Health Officer of the Port of New York, has applied, through Dr. H. C. Herold, the Health Officer of Newark, to Governor Griggs of New Jersey, for the establishment of a quarantine station at Perth Amboy. While all vessels that come to New York are obliged to stop at the boarding station of the Quarantine office on Staten Island, they can land at Perth Amboy without interference, and there is therefore danger of contagious disease being spread from that point. Governor Griggs, it is said, will recommend such a health station in his next annual message to the Legislature. In the meanwhile he has promised to use a \$10,000 emergency fund which is at his disposal for the suppression of any outbreak of disease, should the occasion arise.

**DEATH OF DR. SYLVANUS S. MULFORD.** — Dr. Sylvanus S. Mulford, a well-known New York practitioner, died at his residence in that city on September 9th, of apoplexy. He was sixty-six years of age, and unmarried. Dr. Mulford was graduated from the College of Physicians and Surgeons, New York, and served as a surgeon in the regular army for a number of years during the late war and afterwards.

#### Miscellany.

##### THE ANTI-VIVISECTION BILL FOR THE DISTRICT OF COLUMBIA.

In accordance with a vote of the Rhode Island Medical Society at the annual meeting in June, the following letter has been sent to each senator and member of Congress from that State:

HON. — — —

DEAR SIR: — The Rhode Island Medical Society has instructed me to forward to you, on behalf of the Society, a protest against the passage of the Anti-Vivisection Bill of the District of Columbia.

The United States, in common with all enlightened gov-

ernments, have hitherto encouraged the investigation of the origin and mode of invasion of the infectious diseases both of man and of domestic animals. The results of the researches carried on by the Bureau of Animal Industry and other government laboratories in the District of Columbia have been of great practical value. Such investigations can be made accurately only in well-equipped laboratories and by experiments on animals. Having secured for such purposes the services of experienced scientists the government should not now hamper them by restrictions as to the details of their work, nor place them, as this virtually does, under the supervision of prejudiced persons who do not appreciate the value of biological investigations and who have very erroneous notions as to the cruelty of such experiments.

Trusting that the worthy investigators in the District of Columbia who are laboring faithfully at these difficult and important problems will have your moral support, that you will not doubt their desire to conduct necessary experiments as humanely as possible and that you will oppose any embarrassment of their work by the meddlesome interference of mistaken and misinformed people.

I have the honor to be, etc.

#### WORK AMONGST LEPERS.<sup>1</sup>

THE good work established by Father Damien, the martyr leper of Molokai, still lives. Fortunately for India with its increasing proportion of leper population, there have been some who have caught the inspiration of Father Damien and the work goes on. The latest statistics supplied by the Mission for Lepers, with reference to its work in India, Bombay, Ceylon, China and Japan, show very encouraging results. The Mission assists leper work in forty-five stations in these countries; it has fourteen asylums or hospitals of its own in India and Burmah, and three in China. It supports nine homes for untrained children of lepers, and gives grants-in-aid to nine leper asylums in India and two in Japan. The number of inmates in the Society's homes, adults and children, is nearly 800, or including those in aided institutions about 1,500.

#### TABES DORSALIS AND SYPHILIS.

OBSERVERS are still decidedly at odds regarding the much-talked-of question as to the relation of tabes and syphilis. Leyden has recently published statistics based on 108 cases, analyzed by his pupil Storbeck, in which he finds syphilis in the etiology in slightly over 30 per cent. Erb, who has been most active in the establishment of a definite relation between the two diseases, criticises the figures severely, and himself adduces 200 cases, in which he finds but two per cent. in which syphilis could absolutely be excluded.

The matter is interesting from the point of view of statistics and their proverbial unreliability. Both observers are eminently fitted to judge in a matter of this sort, but the outcome of their investigation is not one to raise our faith in statistical inquiry. It is really a matter of evidence as to what constitutes a reasonable assurance of previous syphilitic infection. Erb relies on slender evidence and allows the balance always to swing toward his side, while Leyden with equal conscientiousness demands a much more definite proof, which in 60 per cent. of these cases he does not

find forthcoming. There is undoubtedly a large mental bias in it all, for syphilis must always be syphilis and tabes no doubt has the same etiology the world over. It is certainly unfortunate that it is so exceedingly difficult to arrive even at correct statements of facts.

#### A SIMPLE CURE FOR INSOMNIA.

THE *Indian Lancet* suggests the following as a ready means of inducing sleep:

"Nature's plan for curing insomnia is to limit the supply of oxygen to the blood, as the cat and dog bury their noses in some soft hollow in their hair or fur, birds put their heads under their wings and soon fall asleep. Those suffering from insomnia should cover their heads with the bedclothes, breathe and rebreathe only the respired air; when drowsiness is produced it is easy to go on sleeping, and the bed covering can be pushed aside and as much fresh air obtained as is needed."

The scientific basis for the above idea no doubt lies in the fact that a certain degree of cerebral anemia is requisite in the production of sleep. It is well known experimentally that dogs deprived of their normal cerebral blood-supply by ligation of the carotid and vertebral arteries are afflicted with an intense drowsiness, so great that they readily fall asleep under most adverse conditions and are aroused with much difficulty. Practically there might be some difficulty in carrying out the plan suggested, but theoretically we do not question the soundness of the idea.

#### ALLEGED CURE FOR BUBONIC PLAGUE.

THE *British Medical Journal* (August 29th), states that Dr. Yersin who studied bubonic plague in Hong Kong during the epidemic of 1894, and has since been working at the subject in Saigon, claims that he has discovered a serum which cures the disease and confers immunity against it. During the past few weeks remarkable cures by him are reported from Canton and Amoy, but he has not yet subjected his remedy to investigation under such conditions as to justify much being yet said regarding it.

In a further paragraph the following interesting details are given:

"We learn from Amoy, China, that Dr. Yersin has been experimenting with his plague serum. Up to date he is reported to have cured upwards of twenty plague patients. The cures are reported to be marvellous, as many of the patients were in high fever, the buboes fully developed, and the sufferers in a comatose state. In Canton, Dr. Yersin, on July 1, 1896, according to Bishop Chausse, effected a remarkable cure on a very unmistakable and a very severe case of plague. After showing the Amoy doctor his methods of injection, he returned to Saigon. It is stated in the newspapers in China that it takes six months to prepare the serum; that Dr. Yersin first inoculates rats and then horses, from which sources he obtains his fluid. It will be remembered that Dr. Yersin labored conscientiously at plague during the summer of 1894, and the excellent work he accomplished entitles any bacteriological research undertaken by him to all respect. It is a pity the treatment he has devised could not be carried out under the eyes of the medical profession in Hong Kong, instead of in the seclusion of a French mission seminary in Canton. This may be accounted for, not from any misgiving as to the cogency of the "cure," but owing to a misunderstanding between the French specialist and the medical officials in

<sup>1</sup> *Indian Lancet*.

Hong Kong on the occasion of his sojourn amongst them in 1894. We await a detailed report of the results of the inoculations at Amoy with interest, and we may say even with anxiety; and the scientific world may rest assured that any publication made by him is to be treated as the outcome of a thorough investigation which can be relied upon, as to accuracy of detail and precision of observation. We earnestly wish the treatment all success."

## Correspondence.

### THE BATHS OF NAUHEIM IN HEART DISEASES.

NAUHEIM, August 15, 1896.

MR. EDITOR:—A recent discussion before the British Medical Association on "The Diagnosis and Treatment of Cardiac Failure,"<sup>1</sup> turned chiefly on the relative merits of the treatment by baths and exercises at Nauheim and of similar measures carried out at home, so far as they can be by artificially prepared baths, and passive or resisted movements after the Swedish method, as adopted by Schott to the conditions in question.

The claims of Nauheim are well known to the medical profession,<sup>2</sup> but a brief account of a two weeks' visit may be of interest to some of your readers. These claims, as set forth by Schott, Groedel and other Nauheim physicians, by Bezly Thorne in an illustrated monograph, and now by a large number of investigators from both sides of the ocean, have doubtless appeared somewhat extravagant to conservative minds, since the probability of improvement, even of cure, is held out in cardiac cases which often prove but slightly amenable to the usual modes of treatment at home. An opportunity of personal inquiry has been of practical interest not only with regard to the detail of the methods, but to the classes of cases, also, that are most likely to derive benefit here, and the limitations to the usefulness of the baths and accessory exercises. Making due allowance for unfavorable cases to which little attention may be drawn, and for the weight of positive impressions derived from strikingly successful cases, as compared with the inconclusiveness of negative results, there appears to be little reason for questioning the efficacy of the Nauheim baths in functional disturbances of the heart and circulation, in simple dilatation from weakened walls or fatty degeneration, and in many cases of valvular disease with failing compensation in patients of fair recuperative energy. The anemic and neurasthenic states are also successfully treated here, as well as graver nervous disorders, especially multiple neuritis and the earlier stages of tabes dorsalis.

The high esteem which Nauheim has gained is attested by the influx of patients from all over the world during the season, which lasts from April until October. The annual total of visitors has increased from 9,000 in 1890 to 16,000 or more this year, the number of baths increasing also from 120,000 in 1891 to about 200,000 for 1896. Numerous physicians are also here for study and observation. The baths are the principal attraction, although the laxative waters of the Kurbrunnen and Karlsbrunnen are more or less used. They are similar in composition to those of the Elizabeth Spring at Homburg or the Rakoczy at Kissingen.

The sources of the baths are Spring No. 7, "the great Sprudel," with a temperature of 88.8° F., and the "Friedrich Wilhelm Quelle," Spring No. 12, from which the water flows at 95.5° F. Both contain a very large quantity of free carbonic acid gas, besides a strong mixture of salines, chiefly common salt and other alkaline chlorides and carbonates. The waters are all impregnated with iron.

It is customary for the patient to begin with a weakened

brine bath, freed from carbonic acid. The strength is gradually increased, and from one to three litres of mother-lye (mutterlaug) may be added for its stimulating effect. After a dozen or more of these baths, the temperature being gradually lowered if the circulation permits, the patient goes on to the "Sprudel baths" containing both salines and carbonic acid gas, until he finally reaches the "sprudel strombad," or current bath, through which the highly carbonated saline water flows in a constant stream during the whole time the patient is in the tub. This, no doubt, is a powerful stimulant to the peripheral circulation and terminal nerves, as indeed is the "sprudel bath," which contains so much carbonic-acid gas that the surface of the skin is covered with a layer of white bubbles. There is a slight rubefacient effect, and to one in good health the sensation is agreeable and exhilarating.

There are five bath-houses with a capacity of 200 baths, and so great is the demand that, during the morning, it is sometimes necessary to wait one or two hours for a bath unless a special daily hour is engaged at an increased price. The duration of the bath varies from five to thirty minutes.

To the heavy charge of carbonic acid gas is largely attributed the improved circulation which follows the use of the baths. At least such is the view of the Nauheim physicians, and the same opinion found expression during the discussion before the British Medical Association, to which previous allusion has been made. But other important factors in their efficacy are the gradually increasing duration with lowering of the temperature of the water; its richness in saline and iron; the added mother-lye. These details are all carefully regulated for each individual case as are the exercises.

On first entering the bath most patients experience a sense of constriction in the chest which soon passes off. The effect upon the pulse is shown by a perceptible slowing of the beat and an increase in its volume. When marked cardiac dilatation is present, a diminution in the heart's area can usually be determined after the bath by percussion and auscultation. The apex comes in toward the median line, the impulse is stronger and more regular, in short, the distended heart contracts more steadily upon the residual blood within its cavities and the cardiac chambers are more completely emptied. This effect might be quite transitory, but after a time, in many cases, the combined influence of baths and resistant exercises brings about a permanent improvement. During the treatment free diuresis usually occurs, secondary congestions of lungs and viscera disappear, and an early absorption of dropsical effusions is not uncommon.

The rationale of these changes (and there are various interesting hypotheses), also how far similar results are attainable at home by ordinary baths and the exercises, or by the Swedish movements alone, are questions beyond the scope of a casual communication. But there is no doubt that the weakened heart may be strengthened in all these ways, provided that the degenerative processes are not too far advanced. The value of balneo-therapeutics in cardiac affections has been ably advocated by Winternitz of Vienna; and at the excellent Medico-Gymnastic Institute of Dr. Gustav Hamel at Homburg I saw numerous sphygmographic tracings from patients with enfeebled hearts that showed rapid improvement under his application of the Swedish exercises.

It is at Nauheim, however, that the best facilities now exist, under eminent physicians, for the careful and thorough combination of all these influences in a pleasant summer climate with agreeable surroundings.

Through the courtesy of Dr. Schott and of Dr. Newton Heineman, of New York, who has spent several seasons in studying the treatment at Nauheim, I examined cases of heart-strain and of dilatation, with and without valvular lesions, at different periods in their course, also before and after the Sprudel baths. A single illustrative instance will suffice. A professional man, aged fifty-six, who had over-worked in a hot climate, came to Nauheim with a largely dilated heart. The apex beat was irregular; in the fifth space outside the mammary line. He had edema

<sup>1</sup> See *Lancet*, August 8, 1896.

<sup>2</sup> *Journal*, April 9, 1896, p. 374.

of the legs, and was too breathless to walk. Gastric distention, eructations and flatulence were uncomfortable symptoms. A systolic murmur was present at the apex. Two weeks' treatment with baths and exercises brought about a regular and stronger action of the heart. The murmur nearly disappeared and the apex beat came within the mammary line. The edema vanished. At the same time he could walk a mile or more, partly over rising ground, without discomfort.

This was probably a case of dilatation from myocardial or fatty change which might have improved under other methods but perhaps not so rapidly. In estimating the value of a specific treatment we must discount the gain that is derived from a good climate, healthful régime, absence of care, mental and physical recreation, improved general condition, and, not least, faith in the physician and his methods. So large a nervous element enters into many cardiac ailments that the restoration of confidence is sometimes the most important factor in cure. The degree to which a patient can help himself also has its bearing upon the prognosis. This relates more especially to the Swedish exercises, which must in some cases be entirely passive, in others actively resistant; and to their combination with Oertel's system of hill-climbing and restriction of fluids, that is so well adapted to the more recuperative class of invalids.

As to the choice of manual or mechanical resistant gymnastics in heart diseases there is some difference of opinion at Nauheim, Dr. Groedel preferring for most cases the Zander machines, while Dr. Schott favors strongly the personally resisted movements he has devised. A careful perusal of the literature on these subjects that has emanated from Nauheim will well repay any one who is interested in the matter. One great desideratum for hospital and family practice is a simple mechanical appliance which will do away with the necessity for a trained gymnast or cumbersome and expensive machinery.

Contraindications to treatment at Nauheim are the ill-effects of a long journey upon feeble persons; advanced arterial sclerosis; aneurism and grave aortic lesions. Mitral affections are in general more amenable, although the less severe cases of aortic disease are often successfully managed.

As the "cure" is a long and serious one, from four to eight weeks, and few people come here solely for pleasure as they go to Homburg or Aix-les-Bains, the capacity of the individual patient, especially if alone, for occupying and amusing himself must be considered. While Nauheim is not a gay resort there is a fine Kursaal with good music and a theatre. The park is beautiful as is the surrounding country. Homburg is ten miles distant, Frankfurt twenty, both within easy reach by train, carriage or bicycle. For the devotees of the latter conveyance there are good roads and many pretty excursions, while the region contains several old castles of Roman and feudal times which possess great interest for the student of history or the antiquarian. For those who undergo the cure an after-cure is recommended in Switzerland, the Hartz Mountains, or some other bracing climate, so that the patient should have about two months at his disposal.

Yours truly,

A. LAWRENCE MASON, M.D.

## TRAINED NURSES.

WAVERLEY, September 13, 1896.

MR. EDITOR:—Will you kindly read a nurse's opinion regarding the hospital work done by the Training Schools—this having been suggested by your article on "Trained Nurses" in the *Medical and Surgical Journal* of September 10, 1896.

I certainly wish to see nurses have all the privileges and consideration that it is possible for them to have. Theirs is a hard life with not too many oases in the desert of hard work. But there are these facts to be confronted.

There is the hard and "menial" work to be done in the hospitals as well as the nursing. At one time the nurses had to mop the floor and wash the dishes, but now, so far as I know, in most large hospitals there are maids to do that, and the nurses simply have the sweeping and dusting to do; and, as it is a well-known fact that many women (particularly the better educated ones) do not know how to do these well, nor appreciate them well done until they are taught, it seems to me an essential part of the training and discipline. Then, again, our hospitals are mostly dependent on the charity of philanthropic people and we are taught that we must get the most good for the greatest number with our means, which entails economy in hospital management.

As things stand now, a nurse gets her experience, instruction and sufficient money to defray her necessary expenses in return for the work she gives the hospital. If nurses are ready to dispense with that allowance, which amounts usually to about two hundred and eighty-eight dollars each, during the two years' training, it seems to me it would be time enough to talk about omitting the "menial" work, but there are as yet comparatively few women who enter Training Schools who could afford to do that.

Lastly, is there danger of educating our nurses into "poor physicians," and is there serious thought of curtailing our instruction in the way of lectures, etc.? Heaven forbid! A nurse who is really interested in her work needs all the stimulus she can get from instruction and the helpful sympathy of the doctors. Perhaps she would like to be a doctor herself, but if she is bright enough for that she will not be content with anything but a thorough medical education. No intelligent nurse can fail to see the necessity of thorough scholarship for the person who has the responsibility of diagnosing and prescribing, and it is very possible to have a sincere love for nursing and of knowing the whys and wherefores without any desire for the more responsible and altogether different work of the physician. Give the nurses better food and comfortable homes to live in; keep up their prices in private practice; let them select their own charities; throw the search-light on their work; criticise when necessary, commend it when possible—and not many nurses will grumble at the comparatively small amount of menial work that they have to do in the majority of hospitals, nor will they wish to usurp any of the authority of the doctors whom they delight to help and to work for.

Sincerely yours,

SARA E. PARSONS,  
Supervisor of Women's Department, McLean Hospital;  
Graduate of the Boston Training School and the McLean Hospital Training School.

## Obituary.

W. C. B. FIFIELD, M.D.


IN the death of Dr. Fifield, Dorchester loses one of its oldest physicians, and the Boston City Hospital a member of its consulting staff. Dr. Fifield was born at Weymouth in 1828, received his preliminary education at Phillips Exeter Academy, and the Harvard Medical School. After his graduation he studied for several years in London and became a member of the Royal College of Surgeons. He also spent some time in Paris. After a few years' practice with his father in Weymouth, he came to Harrison Square in 1861. For fifteen years he was a surgeon at the City Hospital, and at the time of his death, was a consulting surgeon. He was a honorary member of the Boston Medical Improvement Society, a fellow of the Massachusetts Medical Society, a member of the Obstetric Society and of the Dorchester Medical Club.

There had been many physicians in Dr. Fifield's immediate family. He leaves a widow, Mrs. Emily Fifield, who is a member of the Boston School Board, and one married daughter.



## METEOROLOGICAL RECORD

For the week ending September 5th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...30	29.97	67	77	57	72	64	68	S.W.	S.	11	15	C.	C.	.08
M...31	29.83	67	78	56	74	89	82	S.W.	S.W.	10	8	C.	C.	
T...1	30.14	62	69	54	72	50	61	N.W.	N.W.	10	4	C.	C.	.15
W...2	30.30	60	71	49	60	69	64	W.	S.W.	6	15	C.	C.	
T...3	29.91	70	79	60	75	95	85	S.W.	S.E.	22	12	C.	C.	.13
F...4	30.11	61	68	54	62	71	66	N.W.	S.E.	20	4	C.	C.	
S...5	30.21	56	64	48	71	63	67	N.	S.W.	3	10	O.	F.	
														

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., thunders; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 5, 1896.

Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	746	368	19.24	10.27	11.18	1.04	3.51	
Chicago	1,678,967	426	186	26.22	10.12	15.64	4.83	3.91	
Philadelphia	1,164,000	—	—	—	—	—	—	—	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	491,205	211	95	22.56	12.22	15.98	1.88	2.35	
Baltimore	496,315	215	97	34.38	14.72	17.48	2.76	2.30	
Cincinnati	336,000	96	25	8.32	6.24	—	2.08	5.20	
Cleveland	311,587	81	41	15.76	7.38	6.15	4.92	2.46	
Washington	275,500	92	32	17.44	14.17	9.81	6.54	1.09	
Pittsburg	238,617	105	51	35.52	6.72	19.20	9.60	4.80	
Milwaukee	275,000	—	—	—	—	—	—	—	
Nashville	87,754	21	6	19.04	4.76	4.76	9.52	—	
Charleston	65,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	36,587	35	12	17.16	8.58	8.58	—	5.72	
Fall River	88,020	50	31	30.00	4.00	28.00	—	—	
Lowell	84,359	35	19	28.60	8.58	20.00	5.72	2.86	
Cambridge	61,519	32	14	28.17	18.78	26.04	—	3.13	
Lynn	62,335	27	11	40.70	7.40	11.10	—	7.40	
New Bedford	55,254	19	13	36.82	5.26	36.82	—	—	
Springfield	51,534	—	—	—	—	—	—	—	
Lawrence	52,153	—	—	—	—	—	—	—	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	10	4	40.00	—	30.00	—	10.00	
Brockton	33,157	—	—	—	—	—	—	—	
Haverhill	30,185	10	3	—	—	—	—	—	
Malden	29,709	5	2	—	20.00	—	—	—	
Chelsea	31,295	7	2	—	—	—	—	—	
Fitchburg	26,394	4	2	25.00	—	25.00	—	—	
Newton	27,622	13	8	23.07	—	23.07	—	—	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	12	4	16.66	16.66	16.66	—	—	
Waltham	20,877	11	5	9.09	9.09	9.09	—	—	
Quincy	20,712	—	—	—	—	—	—	—	
Pittsfield	20,447	4	4	50.00	25.00	—	—	50.00	
Everett	18,578	—	—	—	—	—	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,554	4	2	25.00	—	25.00	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 2,364: under five years of age 1,072; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 479, diarrheal diseases 329, consumption 243, acute lung diseases 166, diphtheria and croup 85, typhoid fever 64, whooping-cough 31, cerebro-spinal meningitis 8, measles 7, scarlet fever 7.

From whooping-cough New York 15, Chicago 6, Boston 5, Cleveland 2, Baltimore, Pittsburg and Providence 1 each. From cerebro-spinal meningitis Lynn 3, Somerville 2, New York, Baltimore and Worcester 1 each. From measles New York 4, Chicago, Baltimore and Pittsburg 1 each. From scarlet fever New York 4, Baltimore, Cincinnati and Nashville 1 each. From erysipelas New York 3, Nashville 2, Chicago and Providence 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending August 29th, the death-rate was 17.4. Deaths reported, 3,619; diarrhea 336, whooping-cough 63, measles 61, diphtheria 59, fever 56, scarlet fever 45.

The death-rates ranged from 11.0 in Norwich to 24.8 in Hull: Birmingham 22.4, Bradford 16.6, Croydon 13.4, Gateshead 23.3, Leeds 17.2, Leicester 13.1, Liverpool 19.3, London 16.1, Manchester 20.1, Newcastle-on-Tyne 17.4, Nottingham 13.2, Portsmouth 16.1, Sheffield 18.6, Swansea 19.0.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 5, 1896, TO SEPTEMBER 11, 1896.

The following named officers will report in person on Tuesday, September 22, 1896, at 10 o'clock A. M. to COLONEL CHARLES H. ALDEN, assistant surgeon-general, president of the examining board appointed to meet at the office of the surgeon-general, U. S. Army, for examination as to their fitness for promotion: CAPTAINS WILLIAM B. DAVIS, WILLIAM W. GRAY, LOUIS BRECHEMIN, LOUIS A. LAGARDE, JOHN M. BANISTER, AARON H. APPEL, assistant surgeons.

CAPTAIN LAGARDE is relieved from duty as attending surgeon and examiner of recruits at Boston, Mass., to take effect upon the completion of his examination and ordered to Fort Robinson, Neb., for duty.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 12, 1896.

E. R. STITT, passed assistant surgeon, ordered to duty in the Bureau of Medicine and Surgery.

C. H. T. LOWMEES, passed assistant surgeon, detached from the Naval Hospital, Philadelphia, and ordered to the Washington Navy Yard.

L. MORRIS, assistant surgeon, ordered to the Naval Hospital, Philadelphia.

G. D. COSTIGAN, assistant surgeon, ordered to the Naval Laboratory for instruction.

C. F. STOKES, passed assistant surgeon, orders of July 21st modified, detached from duty as member of the Naval and Medical Examining Boards, New York, and ordered to continue as recorder.

## SOCIETY NOTICE.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.—The sixth annual meeting of this Association will be held in Allston Hall, the Studio Building, Clarendon Street, near St. James Avenue, Boston, Mass., Tuesday, Wednesday and Thursday, September 29, 30 and October 1, 1896. Members of the profession are cordially invited to attend. EMIL HEUEL, M.D., Secretary.

## RECENT DEATH.

WILLIAM CRANCH BOND FIFIELD, M.D., M.M.S.S., died in Dorchester, September 10, 1896, aged sixty-eight years.

## BOOKS AND PAMPHLETS RECEIVED.

The Psychology of the Idiot. By Frederick Peterson, M.D. Reprint. 1896.

Announcement of the Philadelphia Polyclinic and College for Graduates in Medicine, 1896-97.

The Parasitic Origin of Carcinoma. By Charles F. Craig, M.D., Danbury, Conn. Reprint. 1896.

Thyroid Feeding, with Report of Four Cases. By Frank K. Hallock, M.D., Cromwell. Reprint. 1896.

The Humane Society of the Commonwealth of Massachusetts Report, 1895-96. Instituted 1785, Incorporated 1791.

Infection Syphilitique L'Accompagnant de Pleurésie, de Phlébite et d'Ictère. Par le Dr. G. Richard d'Aulnay.

Induced Premature Labor in Certain Diseases of the Mother not Obstructing Delivery. By J. G. Swayne, M.D., Lond. Reprint. 1896.

Forty-First Annual Report upon the Births, Marriages and Deaths in the City of Providence for the year 1895. By Charles V. Chapin, M.D., City Registrar. 1896.

Minor Surgery and Bandaging. By Henry R. Wharton, M.D., Demonstrator of Surgery in the University of Pennsylvania. New (third) edition. In one 12mo volume of 594 pages, with 475 engravings, many being photographic. Philadelphia: Lea Brothers & Co. 1896.

## Address.

MANKIND AND THE DOCTOR.<sup>1</sup>

BY O. F. ROGERS, M.D.

THE subject to which your attention is called is "Mankind and the Doctor." It has sometimes seemed as though there was need of a Society for the Prevention of Cruelty to Doctors. In this latter end of the century when of the making of societies for all sorts of purposes, wise and otherwise, there is no end, it might be an ill-considered act to suggest the need of another, but that there is need of a readjustment of the relations between mankind and the doctor is undoubted. There is no evidence to show that mankind has ever suspected itself of cruelty to the doctor, but there is abundant evidence that it has always believed that it has endured much ill treatment from him and it is unfortunately true that the belief is well founded.

All history, sacred and profane, declares it, and it would not be an indication of wisdom or honesty in the doctors to deny it.

It is an interesting fact that though man loves money, and when he is sick, wishes to be cured, he reserves his loudest growl for one whose treatment of him has been rigorous and uncomfortable to bear, and not for him who gives him soft words and agreeable potions, though he may take all his money and fail to cure him.

Some of you in your youth may have read in the New Testament an account of "a certain woman who had an issue of blood twelve years and had suffered many things of many physicians and had spent all that she had, and was nothing bettered, but rather grew worse."

It is probable that if any part of this account is familiar to you it is this, "and had suffered many things of many physicians." This familiarity is due to the frequency with which this quotation has been made use of to express man's feeling of resentment for those who have added to the torments of disease by severity of treatment. The failure to get a cure and loss of money are overshadowed by the thought of useless suffering inflicted by the physician. The failure to appreciate and give due regard to this universal sentiment has been the stumbling-block over which generations of physicians have fallen, and it is to the avoidance of this error that such success as certain sects have attained is mainly due.

However much mankind may dislike certain forms of rigorous treatment and unpalatable doses, it is doubtful if it has ever consciously carried its resentment further than to give vent to its feelings in half ill-natured jibes, or, perhaps, downright wordy abuse. The world knows and is free to acknowledge that the doctor is as honest, devoted and humane as his contemporaries, but because his services are necessarily at the command of all, the high and the low, the clean and the unclean, that he must oftentimes perform duties which are repulsive and whose menial character is only redeemed by their humane quality, he has not received the social recognition, the personal consideration, to which his knowledge, character, and the benefits he has conferred on mankind have fairly entitled him.

There can be no question that those who by reason

of their birth, education, rank and authority have guided and governed mankind and in great degree formed its opinions, have always held in low esteem those whose occupations are to minister to the personal or bodily needs of others. When barbers were surgeons, surgeons were but little esteemed, and this association of the two callings in the minds of men operated for a long time to depress the surgeon in the social scale.

Opinions may differ as to the degree to which these feelings have influenced and still influence mankind in his relations with the doctor, but there can be no doubt that they have existed for centuries though they are now passing away.

The physician has suffered and still suffers from the inability of a large portion of the public to distinguish the true from the false; the pretentious humbug, the oily-tongued charlatan, from the educated and honest physician.

For many centuries medical science lagged behind, while mathematics, architecture, art and literature made extraordinary progress, and it is only within the last two centuries that medicine has emerged from the darkness and assumed its place in the brotherhood of the sciences.

Centuries of association with physicians whose diagnosis was largely a guess based upon false theories of disease; theories whose only influence was to mislead, whose practice based upon these theories or systems, too often violently and fatally interfered with the efforts of the organism to right itself, could not fail to exert a powerful influence upon the mind of mankind, an influence which tended for more than two thousand years to injure the physician in the estimation of the world and very considerably influence its treatment of him.

It is not safe to conclude because the world during the earlier centuries had nothing with which to compare the medical practice of its time except the more ignorant practice of an earlier time, that it held in high esteem or enjoyed the ministrations of those who bled it to faintness, gave drastic cathartics on an empty stomach and an emetic on a full one; who gave the dung of a he-goat for hardness of hearing; who applied cat's dung to the neck to remove any pointed substance lodged in the throat, after which it was thought to be sure to move either up or down, presumably to escape the smell; who treated sciatica with goat's dung applied boiling hot beneath the great toes, and a quartan ague with the fourth book of Homer's "Iliad" laid under the patient's head.

This was the kind of treatment in vogue when Pliny wrote about A. D. 70. Matters had not changed much when Galen wrote in the second century; and though he was a man possessed of great sagacity, industry and literary ability, his actual knowledge of medical science as it is now known was very slight. His considerable knowledge of anatomy was gained by dissecting the lower animals. His physiology was founded on the Hippocratic theory of the four elements, to which he added the notion of a spirit or *pneuma* pervading all parts and mingled with the humors in varying proportion. He also believed that the normal condition of the body depended upon the presence of a proper proportion of the four elements, hot, cold, wet and dry. Diseases resulted from faulty proportions of these elements. He explained all diseases and formulated his treatment by this system which held

<sup>1</sup> An Address delivered before the Norfolk District Medical Society, May 12, 1896.

sway for about sixteen centuries and was only slowly undermined in the seventeenth and eighteenth centuries. So late as 1559 a doctor was haled before the London College of Physicians, for impugning the infallibility of Galen. On his acknowledgment of his error and humble recantation he was received into the College.

Though Galen had great merit as a writer and showed extraordinary acuteness and considerable anatomical knowledge, the fact remains that one of the greatest men in medicine since Hippocrates and whose authority was paramount in the medical world for fully sixteen centuries, believed in amulets and in the influence of the moon on the critical days of disease, and the best that can be said of his prescriptions is that though they sometimes contained several hundred ingredients they were mostly inert.

The opinions of the ancients in this matter are well set forth in the words of M. Cato, "a man," says Pliny, "whose authority stands so high of itself, that but little weight is added to it by the triumph which he gained or the censorship which he held." Cato says, "Son Marcus . . . you may take my word as the word of a prophet when I tell you that whenever the Greeks shall bestow their literature upon Rome it will mar everything, and that all the sooner if it sends the physicians among us. . . . I forbid you to have anything to do with physicians."

Pliny says that "it was not the thing itself that the ancients condemned but it was the art as then practised, and they were shocked more particularly that man should pay so dear for the enjoyment of life."

There is no doubt that Pliny took a malicious pleasure in discrediting physicians, but he was an acute observer and probably his statements of fact are reasonably correct. That he saw some things very clearly that are not evident to the average man the following observation is good evidence, he says, "If physicians attempt to treat of medicine in any other language than Greek they are sure to lose all credit with the most ignorant even and those who do not understand a word of Greek; there being all the less confidence felt by our people in that which so nearly concerns their welfare if it happens to be intelligible to them."

"In fact, this is the only one of all the arts, by Hercules! in which the moment a man declares himself to be an adept he is at once believed, there being at the same time no imposture, the results of which are more fraught with peril. To all this, however, we give no attention, so seductive is the sweet influence of the hope entertained of his ultimate recovery by each. And then besides, there is no law in existence whereby to punish physicians. . . . It is at the expense of our perils that they learn and they experimentalize by putting us to death. . . ."

The remarks of Pliny concerning the proneness of mankind to accept the statements of impostors as proof of their capacity are as true to-day as they were eighteen hundred years ago. In fact, he saw with clearer vision than many who now presume to teach and govern the world.

It is unfortunate that somebody did not read Pliny to the Massachusetts Legislature two years ago, before it passed the law rewarding all who had practised quackery in the State for three years with registration and the right to be called Doctor with the best of us. There are those who believe with Pliny that the igno-

rant quacks having neglected other means of learning, "learn at the expense of our perils and they experimentalize by putting us to death"; and that for this they deserve condemnation, not registration.

In this act of the Legislature we can see in what estimation the physician is held by a representative body of the people.

Certain physicians favored the passage of the act, basing their advocacy upon the plea that it was the best the Legislature would do. To many it seemed that they were willing to sacrifice professional self-respect to expediency and that the object to be attained did not justify the sacrifice. As a law-abiding citizen the doctor can only submit to the indignity, but he cannot be deprived of the blessed consolation afforded by the thought that the charlatans will practice upon the members of the Legislature and not upon physicians. The doctor freely admits that for many centuries his ministration to the needs of humanity deserved the gratitude of mankind, if they deserved it at all, more for the willingness he displayed to serve his fellows than for the help he rendered. He knows that to a great degree he was the victim of his environment, that his knowledge was limited by the lack of means for acquiring it and that mankind must bear a share, and a large share, of the responsibility for his lack of knowledge and for the *morale* of the great body of physicians.

The acquirement of a knowledge of anatomy, physiology and pathology was rendered almost impossible by the blind opposition of mankind to the dissection of the human body.

The tendency of mankind to formulate his beliefs, to establish systems, to make a fetish of a dogma, has operated to deprive him of the benefits to be derived from the exercise of reason and common-sense and to hold him in intellectual bondage detrimental alike to his happiness and progress.

From the time of Esculapius till now one school of medicine after another has arisen and each in turn has declared that all others were false and misleading, and in this has generally told the only truth it had to utter. The doctor has thus displayed a trait common to all mankind, but mankind has been as unsparring in its criticisms and condemnation of this trait as though it had not always been guilty of the same error.

If the doctor had reserved his criticisms for his brethren's dogmas he would have done little harm, but unfortunately, he has not done so. Too often it has happened that if the world had believed all that the doctors have said of each other it would have been justified in concluding that they were not only deluded ignoramuses but knaves as well, into whose keeping it would be unsafe to commit either life or pocket-book.

Fortunately, the world has not taken the doctor's utterances very seriously and has not allowed them to influence his conduct to any great degree, but it can not be doubted that this conduct has tended to lower the physician in the eyes of mankind and to diminish the respect in which he is held.

Though mankind has played a subordinate part in the drama (or tragedy) of medicine it has been an important one. He has stood up and taken his medicine, enjoyed its taste as best he could, endured its effects, noticed its results, and distributed the rewards, often giving the prize of his favor to the doctor who knows best how to play upon his ignorance and weakness.

The late Dr. Alonzo Clark, of New York, used to say that "it is impossible to over-estimate the credulity of mankind," and "that everybody wants a little humbug in his medicine." This seemed to one of his hearers at the time to be an exaggeration, but it was pure wisdom.

Demand and supply usually go together. Mankind has always demanded to be humbugged and the humbug has appeared. The astrologer, the magician, the healer who practised by the laying on of hands, the medicine man, the faith curer, the Christian scientist and the plain quack each came in turn, and the existence of any of them to-day is as discreditable to mankind that supports and esteems them as to the pretenders who live by their deceptions. Those who are neither quacks nor the employees of quacks denounce them as parasites who prey upon the ignorant and credulous, and there is truth in this, but it is not the whole truth.

The guarded statements of science too often fails to meet the wants of the sick and their friends. They demand light when there is no light and hope where there is no hope. They demand answers to questions that only Omniscience can answer, and assurances for the future that only a prophet can give, and turn from the honest and scientific man to the only one who will pretend to have the information they desire, the unscrupulous and ignorant. The commercial instinct in man impels him to drive sharp trades and he bargains for guaranteed cures with the only one who will meet his wishes, the quack, and though he usually gains nothing but experience, he rarely learns anything by it. Mankind takes kindly to amulets and to-day the horse-chestnut, the amulet for rheumatism, rattles in the pocket of the clergyman as he climbs the steps of the pulpit, and the iron ring contrasts with the diamond on the finger of the banker who believes that the iron ring will shield him from the gout. No man would make amulets or play the quack if there was no demand for his wares. Unscrupulous men see their opportunity to profit by supplying "a long felt want," and quackery is one of its results.

It may be claimed that the quack has seduced the world, but if so it must be admitted that "Barkis was willin'." Perhaps some tricky sprite has squeezed upon the eyelids of a goodly portion of mankind the flower Oberon used upon the eyelids of Titania, which has caused it at the sight of the quack, with the asinine head upon the body of the stupid Bottom, to say with Titania:

"Thy fair virtues, force perforce do move me,  
On the first view, to say, to swear I love thee!"

A very large portion of mankind is ignorant of the vast change that has occurred in medical science and the medical profession during the past century. They have not yet learned that physicians are no longer a body of men warring over dogmas, persecuting and driving out of their respective camps those who chance to differ from them, but are now, on the contrary, quite indifferent to dogmas and devoted to the advancement of science and the improvements of methods of cure.

Recently Mr. Herbert Spencer in an article on "The Evolution of the Medical Profession" said that "the incorporation of authorized practitioners has developed a tradesunion spirit which leads to jealousy of the unincorporated practitioner, that is, the irregu-

lar. . . . Like the religious priesthood," he says, "the priesthood of medicine persecutes heretics and those who are without diplomas."

The profession has persecuted heretics, but to-day it troubles itself very little concerning heretics or their beliefs and no intelligent man who knows the real sentiments of physicians can hold the opinion that the tradesunion spirit controls their action.

Mr. Spencer's utterances show that he is one of a large class of educated people who are not yet emancipated from an inherited prejudice against physicians and who are the unfortunate victims of a failure of development of the higher cerebral centres causing what is known as a lack of common-sense and consequent fellow-feeling for quacks.

Though most of the world flies to the physician when ill and listens to his utterances with anxious attention, there is hidden in the minds of many, a fixed idea of distrust of him, which is probably a survival of a sentiment originating in centuries of experience with physicians of the medieval type. This distrust is less in evidence to-day than ever before and the wisest are freest from it and are quite ready to say with Holmes that the diagnosis of the competent physician is divination and his prognosis, prophecy.

However highly regarded by some the physician may be to-day, it is certain that the public is exceedingly inconsiderate in its treatment of him and there is a crying need of a reform in regard to the demands made upon him and the spirit in which they are made.

There is a general impression that he is always in the saddle and that "one hour in the twenty-four is just like another to him." This is true in one respect, in that he is always on duty.

No one who has not tried a continuous tour of duty can have any conception of what this means. The soldier is placed in a somewhat analogous position and must always hold himself ready to meet emergencies, but here the parallel fails, for the soldier receives orders from a presumably wise despot who is concerned to save the strength and maintain the efficiency of his command, while the doctor receives his orders from those who usually are incapable of judging as to the magnitude or imminence of the danger to be met and, in many instances, entirely careless as to times or seasons or the reasonableness or unreasonableness of these demands or the effect of such demands upon the welfare of anybody but themselves. How often has the physician echoed Johnson's remark that "a sick man is a villain."

The physician is as well educated, as much of a gentleman, as honorable and devoted to the interests of his clientele and as worthy of consideration in all respects as are the members of any profession or calling. The most important interests of mankind are intrusted to him and it is equally for the interest of mankind and the doctor that his mental and bodily faculties should be maintained in a condition of efficiency, but this consideration has never entered the minds of the public and probably would benefit nobody if it did.

Men are possessed of the most unreasonable ideas as to the duty of physicians to the public and expect and require instant and abject submission to the most unreasonable demands. Physicians have for so long a time responded without delay or question to calls for their services from all sorts and conditions of men, regardless of time or season, or the probability of re-

muneration that mankind now makes the most unreasonable demands upon the physician without the slightest thought or hesitation. Such instances as the following are frequent, and illustrate the subject better than many words. A physician was called by telephone to go nearly a mile one terribly stormy winter night about ten o'clock. He had regard for his horse and walked to the house. The patient had been sick a day or two but was not very ill. The physician prescribed for the patient and prepared to leave. Then the woman who had been the instigator of the cruelty to the doctor awoke to the fact that her husband must get the medicine from the drug store, a short distance away, if it was got that night, and said to her husband, an able-bodied man, "You must not go out to-night! It is perfectly dreadful outside. We can wait till morning, can't we, doctor?"

The doctor replied that her judgment was correct and that it was a pity that she had not used judgment instead of the telephone an hour ago. This was his last visit to that family.

This incident shows two things that every physician knows to be true of a large portion of mankind, namely, that the question of the reasonableness of the demands made upon the physician frequently is not considered by those who are usually considerate, and that any attempt by the physician to protect himself from unnecessary hardship is not tolerated, and is exceedingly dangerous to his business interests.

Late one wet and windy evening a man asked a physician, who had just finished a long and hard day's work, to make a visit and give his opinion in a case of consumption of several months duration. The doctor said he would do so the next morning. The man asked if he could not go at once and said that the family had been thinking for several weeks of getting his opinion and that now they had decided to get it and wanted it that night. There being no reason why the visit should be made that night, but several very good ones why it should not be, the doctor told the man what these reasons were and again offered to go the next morning. The man refused to wait till morning and departed much displeased and never returned.

Now this may be taken simply as a story of a very unreasonable man, but it is more. The man is a type of a class who believe that they have a right to demand and receive a physician's services at any time they see fit to call for them regardless of the time of day or the existence or non-existence of an emergency. It would seem as though any sane mind would see the abominable cruelty and injustice of such a claim, which is not made upon any other class. But in this matter common-sense seems not to rule mankind.

To test this, the story of the unreasonable man has been told a number of times to people in various stations in life and very rarely has the physician's position been endorsed. Sometimes the physician has illustrated the story by the following fable:

A man discovered a crack in the foundation of the house he lived in. After some time, finding that the crack grew no smaller he decided very late one evening that he would have it repaired. So he went to the mason and told him that he wished to have his wall repaired. The mason told the man that he would call the next morning and see what could be done. The man replied that having decided that the wall must be repaired he wished a beginning to be made

that night, whereupon the mason told the man that he was an ass and went to bed.

People usually say that the mason was right, but the doctor was wrong because "it was a case of sickness."

The physician cannot have a seven-hour day as do those aristocrats, the plumbers, or an eight-hour day with the carpenters and masons, or a ten-hour day with the laborers, or a twelve-hour day with the railroad men. He has a twenty-four-hour day with the sun, moon and stars, and it is very fatiguing to keep up with the procession.

The patients of the specialist in medicine consult him in the hours he appoints, even though they may be sick, and the lawyer's clients do likewise though they may be consumed with anxiety to get his advice.

The general practitioner is pursued days, nights and Sundays. The business man, who is slightly ill, does not visit him during the day because he is busy, and does not do so in the evening because he is tired, but pushes the telephone button and the doctor does the rest.

To have declined on the ground that he was five times as tired as the patient, or that no emergency warranting an evening call existed, would have been to incur much displeasure if nothing worse. Such conduct is an invasion of the physician's rights, to yield to which is in derogation of professional dignity, and the fact that it is done thoughtlessly is no excuse or justification.

Some of the reasons for the lack of consideration displayed by mankind in its dealings with the physician have been referred to, but there is another that ought to be considered, and the physician is responsible for its existence. The physician has never tried to protect himself against the unreasonable demands of his patients. He has in some degree acted the part of the indulgent mother who is always considerate and never asks any consideration for herself, and who yields everything, time, strength, and opportunities for recreation.

He has given freely of his services to all the needy, and his part in the medical charities of the world has apparently been that of the most devoted altruist, though truth compels the admission that he has thereby often served his own interests. But of this latter the world knows little. The young doctor, from motives of humanity and self-interest, gladly accepts a call to go anywhere at any time, and sad experience teaches the older man that unless he wishes to see his business transferred to the younger, he must continue to display the same self-sacrificing and submissive spirit to the end of his career. So long as mankind prizes least that which is easiest to attain the present attitude of the profession in this matter will operate to its disadvantage.

This is not a plea for commercialism in medicine. The doctor will exchange the chief jewel in his crown for a lump of lead when he ceases to exercise the blessed virtue of charity; but he ought to remember that charity begins at home.

It has long been the cherished precept of the profession that its highest mission is to display the virtue of a self-effacing altruism. It is a universally accepted proposition that in his relations with the sick the physician shall place their interests before his own, and he has done so ungrudgingly, oftentimes at the expense of all that makes life worth living, and

the result has been that mankind has come to view the physician as one who has no rights the sick man is bound to respect. This is simply a manifestation of unregenerate human nature. Self-preservation is a law of nature which operates powerfully upon the sick man and his friends and cannot safely be disregarded by the physician. In his work on "Moral Evolution," Prof. G. W. Harris says what every physician may well take to heart, namely, that, "Self-preservation with all its incident evils of struggle, waste and cruelty, is shown to be in line of progress and an essential condition of progress."

Mankind and the doctor have reciprocal rights and duties, and it is quite as much the physician's duty to see that mankind respects his rights as it is to do his duties to mankind.

The duty one owes himself is equal to the duty he owes to mankind. This duty of "self-realization," as it is termed, is as much opposed to selfishness as it is to altruism which passes into self-obliteration. All recognize instinctively the duty of self-realization as opposed to self-obliteration.

Professor Harris says: "One must love himself aright in order to love his neighbor aright. According to this comprehensive precept ('Thou shalt love thy neighbor as thyself!') self-love is not derived from love to others; but love to others gets its pattern, and therefore its measure, from love to self. This is as distinct a declaration of self-love as could possibly be made, and certainly on the best authority. The somewhat similar precept which is found both in Christian and in Confucian ethics — 'to do unto others as you would that they should do unto you' — indicates the right every one has that others should seek his good and so objectifies self as needing love and service. If one is entitled to the efforts of others for his good, he certainly is required to serve himself as he would have others serve him, and as he ought to serve them."

This is the matter in a nut-shell.

To-day the conscientious physician who attempts to protect himself from the unnecessary and unjustifiable demands of the ignorant, thoughtless or selfish portion of mankind, does so with the feeling that he is violating the higher ethical spirit of the profession, but the proper interpretation of the "Golden Rule" gives him this right, the right to serve others as he would have them serve him.

If this conception of the duty of the medical profession to itself and to mankind was adopted as a rule of conduct in place of that which has resulted in evil to the physician, a step would be taken toward a better condition. We can only make a beginning, but this much it is our duty to do.

**SEWAGE FARMS.**—In Paris one-fifth of the sewage is utilized for sewage-farm purposes. For some twenty years the municipality at Gennevilliers, outside Paris, has had several hundreds of acres (once waste land) irrigated, and they now bear magnificent crops of roots and kitchen-garden products. The sewage, after percolating the soil, exudes as pure water. The municipal council, after local opposition, acquired two thousand acres of a Sahara-sandy lightness in the forest of Saint Germain. For two years this district has been irrigated with sewage, and is now covered with luxuriant agricultural and gardening crops. — *Medical Press.*

## Clinical Department.

### THE USE OF ANTITOXIN ACCOMPANIED BY A CONVULSION.

BY ALFRED KING, M.D., PORTLAND, ME.

THE patient was my sister, age thirty-seven, unmarried. Her health has always been excellent. She never had a convulsion, hysteria, or any nervous disturbance.

She was taken with a sore throat. There was a grayish patch on one tonsil which made me very suspicious of diphtheria. I made a smear culture, but not wishing to take any chances, procured a bottle of antitoxin and proceeded to inject it into the subcutaneous tissue between the right scapula and spine with a syringe holding eighteen minims. I had injected two syringefuls and was near a window filling the syringe for the third time, when my mother suddenly exclaimed, "Why, She has fainted!" I rushed to the bed and found my sister in a convulsion: Her eyes were wide open. Her eye-balls were rolled upward and outward and twitching slightly. The muscles about her mouth were also working and a slight noise accompanied a superficial, irregular, spasmodic respiration. Her fists were tightly clinched and drawn across her chest. There was a general spasmodic condition of the entire body. I felt for her pulse and found it very slow, irregular and variable in force. Some of the beats could hardly be felt. The pulse was growing feebler when suddenly all of her muscles became relaxed, her breathing stopped, and she appeared perfectly lifeless. I seized both sides of her chest with my hands and made vigorous passive respiration, the sad experience of Professor Langerhans being vividly in my mind. In a short time I was greatly relieved to see her breathing again, and soon consciousness returned. Her pulse was then about 100, but quite weak. She said: "The strangest feeling came over me and then I was gone."

The antitoxin used was one of the best preparations in the market and was dated December 23, 1895. The date of the injection was August 28, 1896.

Examination of her urine showed high color, but no albumin or casts. The specific gravity was 1.022.

The culture-test proved negative. In a few days my sister was well again.

This case is reported as one of general professional interest in connection with the antitoxin treatment and not with the least spirit of antagonism; for practical experience has made me a firm believer in its immense value. Whether or not the convulsion was caused by the injections, I do not pretend to say. Certainly it would be a very remarkable and exceptional coincidence. I have never known it to occur with any other hypodermatic medication. As infective diseases may be ushered in by a chill or convulsion it would seem not impossible that they might occur in connection with antitoxin injections. My experience in this case leads me to the opinion that such a potent instrument for good may in exceptional cases be very potent for harm, and that antitoxin should not be used promiscuously but by, or under the immediate supervision of, a physician.

PROFESSOR GUSSEROW has been appointed dean of the medical faculty in the University of Berlin for the year 1896-97.



# DELAYED UNION OF FRACTURE OF THE LEG IN THE CASE OF A PREGNANT WOMAN.

BY JOHN R. HAM, M.D., DOVER, N. H.

SURGEONS are divided in opinion as to the influence of pregnancy in the repair of fractures.

Bryant does not mention it as a cause of delayed union; Gross says pregnancy has been accused of preventing union, but he has seen no such result, and is strongly inclined to think the influence has been greatly magnified, if indeed it is not wholly chimerical; Holmes enumerates it as a cause of non-union, but qualifies it by stating that it is only in cases of unusual debility that it can delay the union, and he states that some authors deny its influence even in such cases; Packard, in the "International Encyclopedia of Surgery," mentions the fact that some writers have assigned pregnancy a prominent place among the causes of delayed union, but he says "Against the cases adduced in favor of this view must be set a great many in which the cure has been rapid."

In the case reported below no other cause can easily be assigned for the delay in the cure.

Mrs. H., American, thirty-five years old; the mother of two children, the younger of which was four years old; was in excellent health at the time of her injury and had no sickness since childhood.

On March 20, 1896, she fell on an icy sidewalk and fractured both bones of the right leg at the junction of the middle and lower thirds; the fracture was simple, but the case was complicated by a pregnancy of the fifth month.

The leg was put into a Bryant splint, and suspended so that it did not lie upon the mattress. At the end of the sixth week there was no union whatever; nor was there any evidence of induration, or of callus, at the point of fracture. A plaster-of-Paris splint was then applied and the patient was allowed to go about on crutches. In the eleventh week there was quite free motion at the point of fracture and it was not till the end of the twelfth week that the splint was discontinued. The removal of the splint at the end of the twelfth week was hardly justifiable; but the patient was one who could be trusted, and urged its discontinuance, and no harm came from it. The pregnancy was not disturbed by the injury.

## Medical Progress.

### PROGRESS IN GYNECOLOGY.

BY EDWARD REYNOLDS, M.D.

(Concluded from No. 12, p. 293.)

#### NEW OPERATION FOR PROLAPSED UTERI.<sup>9</sup>

J. M. BALDY describes a modification of the technique of hysterectomy for uterine prolapse. The ligature which surrounds the ovarian artery is made to include the round ligament on each side. A second ligature secures the uterine artery on each side and no intermediate ligatures are used. The uterus is then amputated as far down on the cervix as possible. A suture is then passed on each side through the stump of both uterine and ovarian arteries, care being taken to place it deeply and well back of the

ligatures. On tying these sutures the cervix and vagina are drawn high into the pelvis by the approximation of the amputated surface to the stumps of the round ligaments and ovarian arteries. The peritoneum is then approximated by catgut sutures from the stump of the cervix and along the edges of the incision through the broad ligaments. Any plastic vaginal work which may be indicated is then performed.

The author reports eight successful cases and asserts that the firmness with which the stump is held high in the pelvis is very surprising. [The operation is, of course, open to the objections which apply to all forms of hysterectomy for a disease which, like prolapse, is in itself not fatal.]

#### GENITAL TUBERCULOSIS IN CHILDREN.<sup>10</sup>

Maas calls attention to the rare occurrence of genital tuberculosis in children in comparison with its frequent appearance in other regions. In a careful search through the literature he was able to find only seven cases, to which he adds an eighth. In the autopsy upon a girl five years old, who died of general tuberculosis, he found tubercular ulceration of the mucosa of the uterus and tubes. The muscular wall of the latter was filled with tubercular nodules, but that of the uterus was not affected. The ovaries were normal. There seemed to be no doubt that the internal genitals were the original seat of the trouble. The cause of the infection was most obscure. It seemed improbable that bacilli could enter the vagina, as the hymen was intact and the ordinary causes (coitus, unclean instruments, etc.) could be positively excluded. Moreover, the vagina was healthy. The presence of a line of old fibrous tubercles along adhesions extending inward from the umbilicus to the parietal peritoneum led the writer to infer that the infection entered through the navel, a fact of considerable interest to the obstetrician.

#### SALPINGOTOMY.<sup>11</sup>

Gersung reports a case in which, after removing the adnexa of the left side, the right tube was found to have an occluded abdominal end and to be distended with fluid blood.

Gersung opened the abdominal end of the tube, washed out its contents and stopped the wound by sewing the corresponding ovary into the slit. The woman conceived two months later.

This case certainly proves conclusively that a hemato-salpinx may be so far recovered from as to permit the restoration of the function of the tube.

#### FIXATION OF THE PROLAPSED OVARY.<sup>12</sup>

Sänger reports two cases in which he practised "pelvic fixation" of the ovaries. With the patient in Trendelenburg's posture, ventro-fixation of the retro-displaced uterus was first practised. The prolapsed ovaries were attached to the pelvic brim in one case by passing two fine silk sutures through each mesosalpinx near the ampulla of the tube, and then through the parietal peritoneum just in front of the attachment of the ovarian ligament. In the other case after ventro-fixation the ovaries (previously freed from slight adhesions) were drawn upward, ignipuncture of several follicular cysts was performed and the organs were

<sup>9</sup> American Journal of Obstetrics, Vol. xxxiii, No. 222, April, 1896.

<sup>10</sup> Archiv für Gynäkologie, Band 11, Heft 2.

<sup>11</sup> Centralblatt für Gynäkologie, No. 2.

<sup>12</sup> Loc. cit., 1896, No. 6.



then attached to the parietal peritoneum as before, except that the sutures were introduced around the infundibulo-pelvic ligament just behind the fimbria ovarica. In both instances all former painful symptoms were relieved, and the ovaries remained permanently in normal position. In the second case the patient had conceived, and was six months pregnant.

The operation is comparable with intraperitoneal shortening of the round ligaments, and, like the latter procedure, aims at restoring the displaced organs to their normal position without impairing their natural mobility. It is, of course, impossible to accomplish this fixation of prolapsed ovaries except by celiotomy. It is intended merely as a supplement to other conservative work upon the uterus and ovaries.

#### SYMPATHETIC GANGLION IN THE OVARY.<sup>13</sup>

Elizabeth Winterhalter, as a result of the careful study of the ultimate terminations of nerve-fibres in the ovary, concludes that the ovarian vessels are surrounded by nerve-plexuses, and that a ganglion is situated within the zona vasculosa, which contains cells similar to those of the sympathetic ganglia. Processes from this ganglion anastomose with the perivascular plexuses.

Exner's researches seem to show that ganglion-cells receive and store up impulses transmitted to them, to discharge these again as soon as the stimulus has reached a certain height. A ganglionic system may be interposed between sensory and motor terminal fibres, as in that between the follicular layer and medullary vessels of the ovary. This would appear to throw some light on the causal relation between the ripening of a follicle and ovulation and menstruation.

Pflüger inferred that the growth of the former caused a constantly increasing irritation of the nerves of the ovary, which at its height gave rise to a centripetal impulse, inducing in its turn arterial congestion of the pelvic organs. According to the present theory it is not necessary to suppose that the spinal centre is affected, the ovarian ganglion being the immediate reflex centre in which are accumulated impulses due to the pressure of the ripening ovisac. These which culminate and are discharged along motor fibres to the perivascular plexuses of the ovary and then to the similar plexuses of the entire genital tract are reinforced, possibly by a further reflex action on the part of Frankenhauser's cervical ganglion. Hence a periodical increase in the amount of blood supplied to the uterus, with the resulting phenomena of menstruation.

#### SYMPATHETIC GANGLION IN THE OVARY.<sup>14</sup>

Herff, upon the other hand, after examining the evidence presented by many observers, including Elizabeth Winterhalter, decides that the presence of ganglion-cells has not yet been demonstrated in a satisfactory manner, although their existence, at least in the hilum, seems probable. He denies positively that a true ganglion exists in the ovary.

#### THE INFLUENCE OF CASTRATION ON STRUCTURAL CHANGES OF THE UTERUS.<sup>15</sup>

Sokoloff has conducted a series of experiments upon bitches and rabbits. The heat uniformly returned

after one ovary had been removed, but never after the removal of both. The animals were killed at different periods after the operation, their uteri were removed and hardened. The removal of a single ovary exerted no effect on the uterus, but after the removal of both the circular muscular layer was found to have atrophied, while the longitudinal layer contained a less number of muscular fibres. The vessels were smaller and their walls thickened. These changes reached their height four months after the operation. The endometrium remained unchanged. The author thinks that the atrophy was not due to the loss of the spermatic arteries, believing that these last were immediately made good by the free collateral circulation. After discussing various theories, he concludes that the atrophy is dependent upon the loss of trophic or vasomotor centres in the ovaries. He thinks that the natural functions of the uterus—namely, menstruation, pregnancy and rhythmical contractions—are excited by an impulse from the ovaries and that their cessation follows the loss of this stimulus, while the endometrium, the function of which is not so changed, remains unaltered.

#### VESICO-VAGINAL FISTULÆ.<sup>16</sup>

Kelly describes a new and very rational method of operating upon large and otherwise intractable fistulæ. He begins his operation by a cut similar to the anterior incision in vaginal hysterectomy; he then separates the uterus and bladder up to but not through the peritoneum of the utero-vesical space, carrying the separation widely out on both sides, the edges of the fistulæ are then denuded in the usual manner and stitched together from above downwards, thus leaving a transverse wound for union. In the case he describes in the article, the ureteral orifices were found in the cicatricial tissue on the edge of the fistula, and it was necessary to pass the ureteral catheters through the urethra and into the ureters before stitching the wound together. These were left in place three days without evil effect and the patient made a good recovery.

#### PELVIC ABSCESS.<sup>17</sup>

Thomas A. Ashby makes an excellent plea for the importance of early operation, "a stitch in time saves nine." He emphasizes for the general practitioner facts that are well known to specialists, that small thick-walled sacs may for many years occasion no other symptomatology than pelvic pain and chronic invalidism; and that when such symptoms are due to the presence of even small quantities of pus, the ulterior outcome is necessarily extension and leads either to a fatal outcome or to extensive and difficult surgery, while a careful exploration of the pelvis at an early stage might have resulted in an easy excision of the disease.

#### TREATMENT OF PELVIC SUPPURATION BY ABDOMINAL SECTION WITHOUT HYSTERECTOMY.<sup>18</sup>

Reuben Peterson, in an excellent article on this subject, lays down the following propositions in the treatment of suppuration: "The abdominal route should be chosen: (1) Whenever there is a chance of applying the principles of conservative surgery. (2) Whenever bilateral pus-sacs are present and complete

<sup>13</sup> Archiv für Gynäkologie, Band II, Heft 1.

<sup>14</sup> Loc. cit., Band II, Heft 2.

<sup>15</sup> Loc. cit., Band II, Heft 2.

<sup>16</sup> Bulletin of Johns Hopkins Hospital, Vol. VII, Nos. 59-60.

<sup>17</sup> American Journal of Obstetrics, Vol. XXXIII, No. 21, March, 1896.

<sup>18</sup> Loc. cit., Vol. XXXIV, No. 223, July, 1896.

enucleation is desirable. (3) Whenever the pus points high up in the abdominal cavity."

He believes that it is not good surgery to establish a universal rule that whenever the appendages are removed after bilateral inflammation the uterus should also be sacrificed. On the one hand there are many pus cases which do not regain health without the removal of the uterus; upon the other hand, there are cases in which the excision of the tubes and curettage of the uterus leads to a return of health. He believes that the uterus should be curetted and saved after the removal of both appendages in all but four classes:

(1) When the uterus is so diseased that less radical procedures than hysterectomy probably will fail to relieve the patient of subsequent suffering.

(2) When the appendages are tubercular. In these cases we are dealing with a serious disease which should be treated by the most radical measures.

(3) Where the peritoneal covering of the uterus, and even the body of the organ itself, has been badly injured by the enucleation of the purulent appendages. Here the danger of subsequent bowel adhesions and intestinal obstruction might decide one to perform hysterectomy.

(4) In some bad cases of pus tubes it may become necessary to remove the uterus for the purpose of securing free vaginal drainage.

#### STERILIZATION OF CATGUT.<sup>19</sup>

Edebohls sterilizes catgut as follows: "Buy the raw material, catgut Nos. 0 and 100, in coils five metres long, of an importer of jewellers' supplies. Avoid the fine, white, smooth, alluring catgut sold for surgical use. The smoothness and finish are obtained at the expense of strength of material, the sandpapering process thinning and weakening the catgut in spots. Cut and remove the small pieces of catgut tied around each coil to keep it in shape. Place the catgut in ether to extract fat. Remove the catgut from the ether and allow it to dry thoroughly. To chromicize to the desired degree, place the catgut for thirty hours in the following solution: bichromate of potash, one and a half grammes; carbolic acid, ten grammes; glycerin, ten grammes; water, four hundred and eighty grammes. Dissolve the bichromate of potash in the water, then add the carbolic acid and glycerin. Before placing the coils in the solution arrange them upon a central core or cylinder, of nearly the diameter of the interior of the coil, to prevent entangling and snarling of the catgut as it swells and becomes twisted in the solution. After thirty hours remove the catgut, *with and upon the core*, from the bichromate-of-potash solution, and immediately wind it upon a frame one metre in length, stretching it pretty taut. The catgut is stretched upon a frame to prevent curling and kinking. The drying must be done at a temperature not exceeding 40° to 45° C. If higher temperatures are risked the moist catgut may gelatinize; it then becomes so brittle as to be absolutely worthless. The drying should be thorough and the process should extend over a space of time of several days. If the least moisture remains in the interior of the catgut it will surely gelatinize and render brittle and worthless the catgut when raised to high temperatures in the process of sterilization to follow. This thorough drying after chromicizing is *absolutely essential* to obtain a useful product. After

the chromicized catgut is *thoroughly* dry it is cut into pieces one metre in length. These pieces are rolled on the finger into small coils, which need not be tied, and which are packed nicely into one-ounce glycerin jelly jars, about twenty coils to the jar. Absolute alcohol (Squibb's 99.8 per cent.) is poured over the catgut in each jar until full, a properly fitting rubber washer is placed inside the metal cap, and the latter is screwed down tight. The glycerin jelly jars are then placed standing in a large anatomical jar containing from two to four ounces of absolute alcohol. The cover of the latter is now also screwed down air-and-fluid tight, and the whole placed in an Arnold sterilizer and boiled for five hours and then allowed to cool. The boiling point of alcohol is 78° C. The atmosphere of steam at 100° C. and the firm closure of the small jars, as well as of the large anatomical jar, secure the boiling of the catgut in absolute alcohol under pressure. Chromicized catgut prepared in this way does not decompose or change in absolute alcohol; the combination of the chromic acid with the catgut is an organic one and is not affected by the alcohol. Catgut thus chromicized and sterilized remains strong, sterile, and unimpaired in quality for years."

#### INJURY TO THE URETER.<sup>20</sup>

J. M. Baldy reports a case of injury to the ureter during the removal of an intra-ligamentary cyst which is interesting on account of the distance from the bladder at which the ureter was torn across, and because of his very exact report of the ultimate condition. After the removal of the tumor, the renal end of the ureter was found lying well above the ilio-pectineal line; the other end was buried in the inflammatory deposits and could not be found. An attempt at approximation of the bladder and the loose end of the ureter showed that they could be brought together, though with much tension. The ureter was perforated at an eighth of an inch from its end by a double catgut suture; the bladder was incised; the ureter passed into the opening; and the ends of the catgut made to pass through the bladder wall, and protrude from its peritoneal side. After these were tied, the mucous membrane, muscular tissue, and peritoneum of the wounded bladder were united by separate continuous catgut sutures; each being made to pass through the outer coat of the ureter as it passed by it. The bladder was then securely stitched to the pelvic wall close to the stump of the ovarian artery.

The patient was catheterized every four hours for the first four days and made an uninterrupted recovery. The patient was examined with the cystoscope at the end of four weeks. The point where the bladder was stitched to the pelvic wall showed plainly. The point where the ureter entered the mucous membrane was deeply injected, and the surrounding area was normal. Urine was seen to flow in a normal manner from the ureteral orifice, which protruded above the surrounding mucous membrane.

RÖNTGEN RAYS AND FOOD ADULTERATION.—It is stated that by means of a skiagraph, brick dust can be traced in cayenne pepper, sand in spices, and chalks or alum in flour.

<sup>19</sup> American Gynecological and Obstetrical Journal, June, 1896.

<sup>20</sup> American Journal of Obstetrics, Vol. xxxiii, No. 219, March, 1896.

## Reports of Societies.

### REPORT OF THE EXERCISES AT THE SIXTH ANNUAL DINNER OF THE HARVARD MEDICAL ALUMNI ASSOCIATION.

THE sixth annual dinner of the Harvard Medical Alumni Association took place at the Hotel Vendome, Boston, June 23, 1896, Dr. George B. Shattuck, the President of the Association, presided. Dr. Henry P. Walcott, of Cambridge, Dr. Charles McBurney, of New York, and Professor Theobald Smith, the recently appointed Professor of Comparative Pathology in the Medical School, were present by invitation, and spoke.

#### THE PRESIDENT'S ADDRESS.

*Fellow-Members of the Harvard Medical Alumni Association, Gentlemen:*—It is a more pleasant task to welcome so many of your number to another annual reunion of this Association than it is to reflect how rapidly the years roll by.

This is our sixth annual dinner.

The Association continues to prosper. I learn from your Treasurer that it now numbers 1,321 members. Eighty-seven old members have died since the Association was formed, nineteen of these during the past year. Seventy-six new members have joined since June 1, 1895, the date of the Appendix to the last Catalogue. Among these are three new life members. Forty-five old members, who have for years persistently neglected to attend to their modest annual duties, have been dropped. Among these delinquents figure, I much regret to say, two of the ample list of Vice-Presidents. Another Vice-President, Dr. John Lombard Robinson, of Manchester, N. H., a graduate of the Class of 1859, an army surgeon during the Civil War with a distinguished record, an excellent practitioner in civil life, and a good citizen, has died very recently.

From your Treasurer I also learn that not all of those even who punctually purge themselves of their dues at his office perform the act to his satisfaction and to their own advantage.

Allow me to suggest, as an easy way of avoiding this annual annoyance to yourselves and to your Treasurer, that you should all immediately become life members.

Your Constitution requires that a committee should be appointed to report on the Harvard Medical School, to the end that you may be kept informed of the kind of medical education which your successors are receiving from your Alma Mater, and that she, on the other hand, may receive your generous praise or kindly criticism, as the case may be; but, in any event, your cordial support. Doubtless, even if there were no such Committee, she would continue to dispense medical degrees, and you would continue to be able to digest your dinner. But what your Constitution demands, it is the duty of your President to provide. This year the discharge of this duty has been accompanied by many vicissitudes. Two members of the Committee, Drs. Chadwick and Stedman, from whom a long and vigorous service was anticipated, resigned. (In strict confidence, I may say to you it has been not very credibly suggested that there were internal dissensions, each of these gentlemen wishing to do all of the work.) Dr. Morrill Wyman, of Cam-

bridge, notwithstanding his advanced years, gallantly undertook the work which fell from their nerveless hands. A severe attack of illness, upon the convalescence from which we offer our hearty congratulations, made it impossible for him to carry out his intentions. Dr. John Homans, 2d, was good enough to accept an appointment upon this Committee, though at so late a date; and he, with Dr. Homer Gage, of Worcester, will present a report to you. Dr. Adams, of Pittsfield, has been unable to co-operate on account of distance from the scene of action. In a measure it is, of course, desirable that such a report should be based upon the personal observation and investigation of members of the Committee; but, on the other hand, it would necessarily be incomplete and unfair without the co-operation of heads of departments in the School. Such co-operation upon their part is, we must remember, a matter of courtesy, as it is courteous for us to ask for it. It is a courtesy, however, which is unquestionably for the welfare of the School, indirectly, if not immediately.

Were the head of an important department in the School to reply to a request for information as to the present status of his department, and the outlook for its future, to the effect that there was nothing of interest to be said, the inevitable conclusion would be that such a department is conducted so admirably that no improvement is possible and no change desirable, or that it is carried on in a perfunctory way, or that its head takes no interest in your interest in his work.

I, therefore, venture to hope that such a reply will not be found among those rendered to your committees. The departments in the School dealing with dead material seem to be themselves especially alive; and it cannot be that any department dealing with beings still alive, or just beginning to live, and with live issues, should itself be dead.

However, if, as we are assured by the wise, imitation is the sincerest form of flattery, your Medical School has its admirers, not only at home, but even under the shadow of the great University of Chicago. In witness of this, listen to the following statement of fact:

#### HARVARD UNIVERSITY BEGINS SUIT AGAINST A CHICAGO INSTITUTION.

The authorities of Harvard University are protesting against the use of the name Harvard Medical College by a Chicago institution. A bill for an injunction, sworn to by President Eliot of the University, was filed in the Federal Court of that city lately. The Chicago institution is charged with infringing upon the title and the rights of the great University. The local institution is located at Washington Boulevard and Elizabeth Street. It was organized in 1893, and is conducted as a coeducational medical college, having night sessions only. The president is Dr. A. H. Tagert, and its faculty of twenty professors are all local physicians and surgeons.

The bill filed on behalf of Harvard College, Massachusetts, recited the history of the University since its inception in 1636, the name of Harvard being adopted in 1638. The bill asserts that it "has acquired a peculiar and exclusive right and title in and to the name Harvard, when used or proposed to be used as the name of a university, college, or professional school, and it ought not in equity and good conscience to be assumed by any other institution of learning, and, if ever so assumed by any other institution, must of necessity be so assumed and used in fraud of your orator's rights and for the purpose of assuming some of the credit and reputation properly belonging solely to your orator, and of injuring and endangering your orator."

peculiarly and otherwise, and imposing upon and defrauding the public everywhere."

The case will probably come into court next autumn.

Although desirous of leaving to another and more competent presentation a suitable statement in regard to the new Professorship of Comparative Pathology, I cannot, as your President, refrain from all mention of this very generous, useful, and intelligent endowment in the Medical School. Let me read you the text of the donor's deed of gift, that you may know just what his wishes and objects were in creating this foundation:

It is my wish to testify to my deep interest in the advancement of medical science and the higher medical education,—an interest originating in the fact that my father was a physician.

I therefore offer to the President and Fellows of Harvard College the sum of \$100,000 in cash, payable July 1, 1896, as a fund for the endowment of a Professorship of Comparative Pathology in the Medical Department of Harvard University.

I desire that this fund shall be forever known as the George Fabyan Fund, in memory of my father, George Fabyan, M.D., and that the Professorship shall also bear his name.

It is furthermore my wish that the income of the fund shall be applied, first, to the payment of the salary of the Fabyan Professor of Comparative Pathology, who shall also be a member of the Medical Faculty, and appointed to office in the same manner as are other professors in that body, and who shall devote his time to the duties of his Professorship, not engaging in private practice without the recommendation of the Medical Faculty and consent of the President and Fellows.

It is fair to him and to them to say that the founder's generous impulses and desires were stimulated and guided by two of the professors in your Medical School; and we freely forgive them, I am sure, for allowing such an event to come upon us by surprise.

Gentlemen, I have not forgotten that I am only the showman, and not the show, and will not keep you longer from the genuine sources of an inspiration which brought you here to-day.

Dr. John Homans, 2d, will present the report of the Committee on the Harvard Medical School.

#### REPORT OF THE COMMITTEE ON THE HARVARD MEDICAL SCHOOL.

The President having kindly stated the adverse circumstances under which this report had been prepared, the Committee present it without further apologies.

Our heartiest congratulations are extended to the School on receipt of one hundred thousand dollars to endow a Professorship of Comparative Pathology, and on the election to that office of Doctor Theobald Smith, formerly Professor of Applied Zoology at the Bussey Institute. We wish Professor Smith, our honored guest to-day, all success in his new work, the outlines, purposes and great opportunities of which he is present to explain to us.

Would that the generous donor did not insist on concealing himself under the title of a "Merchant of Boston,"<sup>1</sup> but would allow us to toast his name with all the honors, as we try to properly express our thanks and our sense of the deep obligation that all who are interested in medical education owe to him!

Just a quarter of a century has elapsed since the adoption of the three years' graded course at the Harvard Medical School marks the beginning of the modern methods of medical education on this continent. And to-morrow the greatest height yet attained by this movement will be reached when the first compulsory four years' class will graduate, eighty-five in number, of whom thirty-five will

take a *cum laude* degree. Thus nearly half graduating have attained an average of over 75 per cent. in all studies for four years,—a record believed to be unequalled in any department of the University, and not brought about by any leniency on the part of the examiners, as is shown by the fact that, out of the total number of applicants for a degree, 15 per cent. failed to pass.

This year, for the first time, seats in Sanders Theatre, proportionate to the number of all graduating, will be reserved for the graduates of the professional and scientific schools; and the Deans will personally present to the President and Fellows the graduating class of their respective schools, so that at last the order of the Commencement exercises at least will fittingly celebrate the fact that Harvard is a great university, and not a mere college with appendages.

A detailed comparison between the School of twenty-five years ago and that of to-day, with its long list of skilled teachers, ever-increasing clinical advantages, and new departments, would be extremely gratifying to every Alumnus, but too lengthy for this report. It would probably show that the advances of the past twenty-five years were far greater than those made in the fifty years preceding 1871. A pamphlet published in 1821, entitled "Some Account of the Medical School in Boston," in enumerating its clinical opportunities, gives, "as the record of important surgical cases and operations for the month of November, 1821, one fractured leg."

Among the events of these years of progress there is one of recent years which, in its importance, equals, if not overshadows, all others, as it has changed the policy of the School to a marked degree. The introduction into its organization of blood foreign to our Alma Mater has been followed by beneficial results so confidentially predicted. The effect of this change of policy has been so great in the way of enlarging the horizon of thought and widening the scope of inquiry that it is to be hoped that always in the future the School will call to its aid, for any special need, the best man in the country; and that at no distant day it may be able to pursue this policy more easily and to the best advantage by having hospital appointments at its own disposal.

Besides the munificent gift mentioned before, the School has received from Mr. Townsend W. Thorndike the sum of five thousand dollars to found the William H. Thorndike Prize Fund. From the interest of this fund a prize of two hundred dollars will be given annually to the author of the best essay on some subject in any branch of surgery. Competition is open to students of the Harvard Medical School and graduates of under five years' standing of any recognized medical school. This fund is established by Mr. Thorndike in memory of his father, the late Dr. William H. Thorndike, an eminent surgeon of Boston, one of the original appointments on the staff of the City Hospital, where, among many brilliant surgical achievements, perhaps the most important was the ligation, for secondary hemorrhage, of the internal iliac artery with recovery of the patient,—at that time probably a unique case.

In returning grateful acknowledgments for this Prize Fund, the Alumni might well consider whether they cannot aid in providing a substantial income for the School. Certainly, this Association should encourage the formation of Class Funds, as is the custom in the academic department, so that each graduate may feel that there is a way open to him to quietly and unobtrusively contribute whatever his means allow to a fund the income of which should be spent in furthering some project for the good of the School, and the entire amount of which would be eventually turned over for any general purpose or used for the endowment of professorships.

The pecuniary needs of the School are constantly increasing. Money is needed to provide more laboratory space, one professor reporting that one hundred and fifty students are obliged to work in a room built and arranged for sixty, and another reporting that the space in his laboratory allotted to each student has had to be diminished by one-half. The growth and usefulness of the School in

<sup>1</sup> Since announced as George F. Fabyan, Esq.

its present building has reached its limit; but there are so many factors of great importance and value, not only affecting the present, but the future, which are concerned in the questions of a change of site or an addition to the present building, that the matter is too complex and weighty to be properly discussed in a report of this sort.

Money is also needed for the publication of reports of the valuable work in special investigation which is now being done in the several departments.

It can be reported that progress has been made during the past year in the vexed question of granting the suffrage for Overseers to the graduates of the professional schools. This year we nearly reached the goal,—in fact, were beaten only by a head. The vote in the Board of Overseers was a majority of one in the affirmative; but, the chairman voting in the negative, a tie was thus recorded. All Alumni interested in this matter should make an effort to increase the vote for the affirmative.

There have been but few new appointments during the year. Dr. F. B. Mallory, Instructor in Pathology, has been chosen Assistant Professor in that branch, and Dr. J. T. Bowen has been appointed Instructor in Dermatology; Dr. F. S. Locke, Instructor in Physiology; Dr. F. E. Cheney, Instructor in Ophthalmology; and assistant Dr. H. T. Hewes, Chemistry.

Turning now more especially to the departmental work, we find that the Dean has taken a very popular step in asking Classes to appoint committees to confer with him as to matters affecting the School at large.

The fact that this year the Fourth-Year Class consists for the first time of students who were obliged to study four years for their degree makes a *résumé* of the work of the various departments unusually important, as we all desire to know how the Faculty are meeting the extra demands made upon them in the way of more detailed instruction and thorough clinical training. The study of the various reports show that in all departments the gentlemen whose names are in many instances so widely known in connection with their especial branches are actively at work extending their clinical fields and increasing the facilities for a hard-working student to learn all he can.

In no department of the School has there been more zeal and enthusiasm displayed than in that of Pathology, shown not only by the interest of the students, but by the number of young men now at work on special lines of investigation, and by the able articles published during the year in various medical journals.

*Medicine.*—The reports of four cases in clinical medicine are now required from any candidate for a degree. The opening of the Contagious Hospital, the so-called South Department of the City Hospital, furnishes an opportunity for the Fourth Class to become practically acquainted with the diagnosis and treatment of all contagious diseases.

One of the most important departments in the School, as in all modern medicine, is that of Bacteriology. The head of this department has had charge of the preparation of antitoxin for the City of Boston and of the development of the cultural diagnosis of diphtheria for that and other communities. This has been of great value, and has provided a large amount of material for the purposes of instruction; but the department is badly hampered by lack of laboratory space and money.

In *Materia Medica* and Therapeutics, eleven demonstrations of physiological action have been given, and a voluntary laboratory course has been taken by one hundred and seventeen students.

In Chemistry the instruction of the First-Year Class has been entirely changed, as the requirements for admission now include General Chemistry. For it a course in Physiological Chemistry, with laboratory exercise, has been substituted. The instruction in the Second Year has been increased by the addition of laboratory exercises in the chemical examination of blood and gastric juice. Here, also, the accommodations are too small.

In Physiology, by voluntary lectures on special subjects,

an attempt has been made to provide instruction attractive to advanced students and graduates.

In Surgery an extra exercise for clinical demonstration for the Fourth Class has been added, and arrangements have been made by which they can be present at emergency cases in the hospitals. After this year every student must present a satisfactory report of a case of fracture; and in clinical surgery a report of a case, in addition to that now required, will be demanded.

This is the first year in which orthopedic surgery has been a required exercise of the whole class. The large clinics have provided most excellent opportunities for good instruction. With the valuable anatomical material in the Warren Museum and the voluntary aid of a number of surgeons to out-patients, a systematic scheme of instruction has been inaugurated, better than that, probably, given in any other school.

Other departments, as neurology, otology, anatomy, diseases of children, etc., also showed sustained and persistent efforts to meet the increased requirements of the School.

A most important step in advance has been taken during the past year by the vote of the Faculty that in and after June, 1901, candidates for admission to the Medical School, must present a degree in Arts, Literature, Philosophy, Science or Medicine, from a recognized college or scientific school, with the exception of persons of such age and attainments as may be admitted by a special vote of the Faculty in each case. The vote of the Faculty was not absolutely unanimous on this point, and an essay might be written on the question as to whether a man is necessarily a better doctor because he has enjoyed the advantages of a liberal education. Although there may be some who believe that a surgeon can successfully remove a diseased appendix without possessing an adequate knowledge of the architecture of the Parthenon, yet we are sure that every member of this Association will rejoice at any action of the Faculty which will raise the requirements necessary to enter a profession the dignity and honor of which are dear to the heart of each and every member, and which has always commanded the respect and confidence of the community.

**THE PRESIDENT.**—Last year President Eliot attended our dinner, notwithstanding many other pressing engagements, and spoke to us of some of the educational issues of the day as they affect the professional schools. This year we resign him, though unwillingly, to other demands upon his presence.

However inadequately our profession may be represented in the Board of Overseers of the University, two-sevenths of the Corporation are, fortunately for the University and for the community at large, doctors of medicine. It is well, then, that in the enforced absence of the President the University can here be represented by one undivided half of those two-sevenths of its Corporation. Not only as a Fellow of Harvard College, but as Chairman of the Massachusetts Board of Health, as President of the Massachusetts Medical Society, as a member of the Metropolitan Water Board, Dr. Walcott is a notable instance of what honorary membership in this Association will do for a man. In the language of the St. Louis Convention, I ask him to extend to you, in behalf of the University, "the glad hand."

SPEECH OF DR. H. P. WALCOTT.

*Mr. Chairman and Gentlemen of the Medical School Association:*—I wish to say in advance that I am not going to attempt to answer in more than one of the various qualifications which your chairman has so generously bestowed upon me. It is only as a physician, who is incidentally a member of the Corporation, that I am going to speak to you. Regretting, as you do, the absence of our great chief, I am still glad of the opportunity to say what I know you will all agree with me in feeling,—a few words with regard to his services to the Medical School. An accomplished

scholar, a mathematician, the head of a chemical laboratory, President Eliot brought to the University and to the Medical School qualities which no previous holder of that great office had possessed; and there has been no step in the magnificent progress of medical instruction here that has not owed a very great part of its success to the insistent energy and good sense of President Eliot. Like a few others here, I am old enough to remember the instructions of the previous generation in the Medical School; for the most of my medical education was received in the Harvard Medical School, and I only changed my nurse at the very last moment, so that, for good or for ill, the Harvard Medical School must bear the credit or discredit of my medical bringing up. You of that generation who are here will remember how scanty were the opportunities offered to us. Beyond the inspiration of personal contact with some great teacher,—and let us never forget that there were great teachers in those days,—the students received almost nothing. Laboratory instruction, the instruction in the clinics, scarcely existed; and we went out into medicine prepared to acquire what skill we might by diligent experiment upon our fellow-men. And what a change has come! To me the most notable thing at this time lies in the remembrance of the fact that one hundred years ago an ordinary practitioner of medicine came upon the most remarkable discovery that the science of medicine has ever known; and he not only made the discovery that vaccination was our surest defence against small-pox, but with prophetic vision he saw that upon the lines of medication by inoculation were to be founded our methods of dealing with a great many other diseases. He could think of nothing more serious than the bubonic plague, the black death of the Middle Ages; and I don't know that we always remember quite as distinctly as we ought that it was the shadow of that black death, stalking through the streets of London in 1665, which fell across the Atlantic, and produced in New England the first attempts to establish a quarantine service in Massachusetts Bay,—a service which, fortunately, then proved to be unnecessary. With all the fearful history of the plague in mind, Jenner predicted that the time would come when the discovery of some milder form of the disease and the inoculation of it would free the human race from its most relentless enemy. He probably never expected that the discovery would be made any other way than he had discovered vaccinia—by happy circumstance and careful observation—but what he hoped would be revealed in that way has been brought to light by laboratory research; and a Japanese investigator, trained in the laboratories of Berlin, has produced in his laboratory at Tokio the disease which Jenner expected to find perhaps by accident. It seems to me singularly appropriate, then, that in this year an intelligent citizen of Boston, as wise as he is generous, has seen fit to establish a Professorship of Comparative Pathology in Harvard University. Of course, the expenses of these investigations are very great. The University out of any funds it possesses would find it impossible to provide them, so that it is most fortunate that this wise and intelligent man has seen fit to build this most worthy monument to his father's memory, who was also a physician. While we must look for the larger part of such endowments, to men outside of the profession, yet I call to your attention the fact which

has so often struck me in going over the list of our benefactors,—how frequently is found there the name of a teacher in the Medical School of the University. When we recall the names of Hersey and Boylston, Warren and Jackson, Parkman, Shattuck, Ellis and Williams—I speak only of the dead—how touching it is to think that these men not only gave the best they had—their personal service, their lives—but made this preparation for the perpetuation of the good work after they had gone.

**THE PRESIDENT:**—You will agree with me that it is a rash and strange thing for any man, and above all for a New Englander, to face fortune in the practice of our profession with any other medical degree than that of the Harvard School. Still, it is done, and done with success—though the success we should be inclined to attribute to the saving grace of a Harvard College A.B.—by one equipped with the M.D. of the Medical School of Columbia College, and an experience as interne at Bellevue Hospital.

Thirty-five years ago, when I was in Vienna, Billroth was the great surgical master. There was also there at that time as a student one McBurney. I have not seen much of him since; but even that has not prevented his adding to his name such titles as Professor of Surgery in the College of Physicians and Surgeons New York (Columbia College), Surgeon to Roosevelt Hospital, Consulting Surgeon to St. Luke's Hospital, the Presbyterian Hospital, Bellevue Hospital, the Orthopedic Hospital, the Hospital for Ruptured and Crippled, among others. Lately there was brought to my notice a letter written by Billroth to a parent asking advice for a son desirous of choosing medicine as a career; and I wish, in presenting Dr. McBurney to you, to repeat the following passage:

"To enable the physician to spend himself freely, he must have accumulated a rich fund of knowledge. And, in possessing such a treasure, the physician enjoys the special privilege of seeing it increase directly in proportion to the lavishness with which it is spent. Activity in the practice of medicine leads to increase in experience, development of judgment impels us to supply the deficiencies in our knowledge, enables us to follow the progress of the art of medicine which itself results from the progress of science. A physician who gives himself up to critical, unprejudiced observation sees his own stock of experience and knowledge increase in the very dispensing of it for the relief of others,—always provided that he is a good man, with a strong sense of duty, has a sound understanding, and takes delight in work and in his calling."

**SPEECH OF DR. CHARLES MCBURNEY, NEW YORK.**

**Gentlemen:**—To be here as one of your guests to-day is an honor of which I may justly be proud, and I fully appreciate it. As your president has told you, I am an Alumnus of Harvard. If there is one thing that I may regret in my past life, it is that I am not an M.D. of Harvard. But I was born in Boston, and lived here for many years; and therefore I have always felt that I had the right to delight in looking on with pride at the magnificent march of professional progress that has characterized the surroundings of Harvard, and the leadership of which you have so easily held. The professional atmosphere about Harvard is universally recognized to be especially clear. That feeling, I think, exists over the whole of this country: it is appreciated in Europe. And I feel to-day a little like the man who had lived all his life on the banks of the Mississippi near its mouth, where the stream was very wide and deep, but the water was not very clear. One day he was filled with longing to see the sources of this power, where he had heard that there was clear water; and after long journeying he came to it and saw it, and he was very much



pleased. The stream was not so large as his own; but it was very powerful, and the water was very clear. Now, your genial President, when he invited me to join you here to-day, said to me, "I will help you a little in selecting your topic of conversation by telling you what *not* to talk about." He said, "Don't talk to them about medical education, because they know all about that; and, besides," he added, a little unkindly, I think, "they can tell us nothing in New York about medical education." There is some truth in that; but still, as a guest, I must claim the privilege of, to a certain extent, going counter to the suggestions made by your President, and I must speak to you a word at least about New York. I have heard—in fact, I know by conversation and reading—that you have devoted a great deal of labor to the consideration of certain questions as to your third-year course, then as to having a fourth-year course, as to the arrangement of recitations, clinical lectures, and various other matters; and you have wrestled with these problems, and they have given you much trouble. Now, you will be surprised when I tell you—but it is a fact—that in New York we have no trouble at all with these questions. What we do is this: When we are laying out the scheme for the next year, we take one of your reports, and copy it; and, if you want to know how we are getting on to-day, all you have got to do is to go over your last year's report. In that way we save ourselves much discussion, and yet we are sure to lay out a good course.

But I am not going to speak to you about medical education with reference to the education of the student. I think you are fully able to take care of that; and I think we shall follow, as I have said, very gladly in your footsteps. It is some years since I have had anything to do with didactic teaching. I do not now come closely in contact with the student who is studying for his degree; but I am constantly coming in contact with the young men who have taken their degrees, and come into the hospital to live as internes, and with those who have recently graduated from the hospitals and are beginning practice. And it is in those men and with the future of those men that I personally am more deeply interested than I am in the school education of the medical student. In some respects the well-educated medical student is ill-prepared for practical life. And, while I am fully with you in the belief that we can hardly have the medical student who is studying for his degree too well educated, I think we must be a little careful lest we shut him out, by occupying the whole of his time in medical student life, from some very important parts of his education.

The important element in the development of the practitioner must be kept in mind; and I think we will all be agreed that, however valuable the specialists who are not exactly in the line of practice, the important part for us, for our medical schools, and for the profession, is the production of good doctors and good surgeons. These we *must* have. If we do not produce them, we shall fail in attaining the special object of our medical schools. We cannot have too many scientists, too many laboratory men. We depend upon them. They are the romance and the best part of our life; but we must have good doctors and good surgeons, otherwise the profession falls. Now, if any one were to ask me what I considered the most important thing in the production of a good doctor or

a good surgeon, I should say it was his hospital life, that no other single part of his life compared in value to that. Whether he has his four years' course or three years' course, I look upon as comparatively unimportant. The student who has had two years' full course, and two years of good course, and then has a hospital life of two years, is, in my opinion, worth infinitely more than a student who has his four years' medical student life and no hospital experience. I would not be understood as raising a word against the increase in the number of courses, except a word of warning. It is chiefly the consumption of time we must consider; and that question has come up before, and has been deeply studied by the President of Harvard College and all those interested in professional life in various departments. It is a very important question whether we can afford to consume so large an amount of time as four years in Harvard College, and four in the Medical College, before the individual has a right to begin to practise; but the hospital life I look upon as absolutely essential, if we would develop the fine students that we have given M.D.'s to. I see that constantly year after year. They come into the hospitals as internes well provided with the fund of knowledge that is acquired by a student in a good medical college, but totally unable to apply it, totally at sea as to what they like and what they do not like, totally ignorant as to whether they are fitted for this specialty or that specialty; and I see them go out of the hospital fully developed, men that I did not expect it of in the least, fine characters, able, self-poised, ready to attack serious problems, and fully prepared to become valuable members of the profession. And I look upon this as so important that I would make very large sacrifices in other directions to encourage students to have this portion of time, a year and a half or two years, allotted to them for life in a hospital. There is something about the constant contact with the patients, the constant feeling of responsibility, which is not too heavy to crush, though heavy enough to strengthen, that develops the man month after month with the very greatest rapidity.

Then I think this sort of life—hospital life—which develops a man, and which completes the knowledge he has acquired as a student, is essential to prevent the too rapid production of imperfectly prepared specialists with whom the profession is overloaded. I do not know how it is here, but in other cities I have seen specialists who have had no previous education which would qualify them for the work they are doing to-day. I do not mean they have not had their degrees. For instance, there are men, who are now fifty years old, who are doing very large operations in surgery, under special names, who would not dare to amputate a leg. There is something very wrong about this. A short time ago a man just graduated came to me for my advice in regard to his future career. He said he desired to be a specialist, and the specialty was operative gynecology. I said to him, "I think it is a fine department, if you will qualify yourself for it." I proposed to him that he should immediately study surgery, try to get into a hospital, become a house surgeon, learn the principles of general surgery, and then study gynecology, and try to apply those principles to the practice of that department. A few days afterward I met him, asked him if he had arranged his plans, and what hospital he would go to; and he said he had given that up, it



would take too much time, and that he had found he could associate himself at once with an operative gynecologist who had a large practice, and he would in that way save all the trouble of studying surgery. This gynecologist whom he proposed to associate himself with had never had any surgical education whatever. He had formerly been a medical practitioner.

In a city not a great way from here and within a very few weeks an incident occurred that was illustrative of the same thing. An operating gynecologist of very rapid production — for he never had done an operation before he was forty-five — had begun to operate in a hospital before his class, on a case of ovarian tumor. He made his incision partly through the abdominal wall, when there was a considerable bleeding, more than one would usually see in such a case. "Damn it," said he, "we have got a hemorrhage. Send for the surgeons." And some of the house staff did go off to another part of the hospital to ask one of the surgeons to stop the hemorrhage before the operation of gynecology could go on. Now, there is no question but what we are threatened with an increase of practitioners engaged in very important and serious work who are not properly qualified, and I believe that the key to the proper qualification is to live in a hospital for one or two years as interne; and I wish that I might make a sufficient amount of hospital life a condition for being allowed to appear before the public as a specialist in any important department. The difficulty about this is the practical solution of the problem. We have not enough hospital appointments. We cannot send all our students to live in the hospitals; but that should not deter us, should not deter Harvard, which is trying to raise the standard so much, from encouraging this particular view. That should rather encourage us to advocate the enlargement of our hospitals, and especially of those hospitals that are in immediate connection with our medical schools. You never can have a hospital here that is too large for your demand, in my opinion; and that hospital should be one that you to a large extent can control. Until you are able to do that, send your students elsewhere. Tell every one of them that the first thing to do after getting his degree is to gain a position as interne in a hospital somewhere. Send them to us in New York. We would be glad to have them; and, judging by the manner in which you teach your students, I believe most of the hospital places could be taken by Harvard men.

THE PRESIDENT: — Some of you know something about Comparative Anatomy, and a few, perhaps, something about Comparative Physiology. I am sure you are all eager to hear what may be expected from Comparative Pathology.

A professorship, however richly endowed, without a professor is like a rich soil without water or a rare musical instrument without a player.

I present to you Dr. Theobald Smith, an honorary member of this Association, formerly biologist to the Bureau of Animal Industry in Washington, later biologist to our State Board of Health, and Assistant Professor of Applied Zoölogy in Harvard University, now Professor of Comparative Pathology in the Harvard Medical School.

SPEECH OF DR. THEOBALD SMITH.

*Mr. President and Fellow-Alumni, by your courtesy:* — When your honored President invited me to say a few words to-day upon comparative pathology in its relation to human medicine, I thought the task a simple one. This was a mistake, however, due to the

fact that I had never before formulated my stray thoughts upon this subject. The points of contact between human and comparative pathology are so numerous, the one subject shades so indefinitely and unnoticeably into the other, that it was necessary at the outset to determine, if possible, what is comparative and what is human pathology before tracing their relationship.

The vague and shifting outlines of my subject have compelled me to hold them by putting them on paper. I may thus be able to avoid the accusation of having preached what I do not intend to practise, as well as the regret of having left important matters untouched.

It is of vital importance at the present time, when the attention of the medical profession and of the public has been aroused to the necessity of accurate information concerning the diseases of animal life, both for economic and sanitary reasons, that the study of such diseases be dignified by a recognition from medical science and an absorption into it. No one who has dealt with any phase of experimental medicine will refuse his assent to the proposition that the successful study of animal diseases requires as thorough an insight into physical, chemical, and vital processes as the study of human diseases, so that the recognition of comparative pathology is only the graceful acceptance of a well-established fact. This alliance will be fruitful in many ways. It will furnish a much needed stimulus for the student of comparative pathology, because to be successful, he must of necessity keep himself informed of the progress in the kindred departments of human medicine. On the other hand, the student of human medicine is much less likely to be conversant with the important data of comparative pathology, because he has not the time to separate the wheat from the chaff, and to get the kernel best adapted to his immediate wants. More often he seems quite unaware of the wealth of useful and suggestive information which lies undeveloped in the field of animal pathology.

It is not difficult for one familiar to a certain degree with both fields of inquiry to see work undertaken and carried out which would not have been undertaken at all, or else carried out differently, if the investigator had had in mind demonstrated facts from comparative pathology. Some of this work suggests a cone standing with uncertain ease upon its apex, and waiting to be toppled over by any slight impact. A single gross fact easily observed may defy the conclusions of the most elaborate thesis which has failed to take it into consideration. A broader knowledge of disease will save much useless labor by supplying the necessary foundation.

In order that I may not be misunderstood, I wish to emphasize the fact that comparative pathology is greatly and even hopelessly indebted to pathology as fostered in the medical schools; and it will continue to be so. The best and most painstaking labors will in the future, as in the past, be dictated by the immediate demands of human medicine. While the comparative pathologist must for a long time to come be content with a perhaps superficial bird's-eye view of a large territory, the human pathologist will find his most congenial work in the thorough tilling of a small field. He should, in the language of a doctor's sign in this city, be a "chronic specialist," because of the already advanced position of human pathology. Or, put in another way, the comparative pathologist must

be satisfied with masticating and digesting what the human pathologist will absorb and assimilate.

Comparative pathology has been by no means entirely neglected in the past. Many investigations are on record which have been made by those associated with the teaching of human medicine. In fact, most of the progress in etiology is due to workers of this class. Even at the present time, when the profession of comparative medicine is beginning to bestir itself, and is contributing some very creditable work to our stock of knowledge, the eagerness with which medical schools in this country and in Europe take up the study of animal diseases shows that the essential oneness of pathological processes is now universally recognized. The use of animals in the study of human diseases is of such importance that it forms today the matrix, as it were, of all experimental as distinguished from clinical medicine. This use of animals, though a part of comparative pathology, is not to be regarded as the whole. Comparative pathology, in its most important aspect, comprises essentially the study of diseases as they occur in nature, and not as experimentally produced. The infectious disease is rarely exactly reproduced by artificial infection, because infection is a complex process. Even if we knew all the attending circumstances, we should be unable in many cases to reproduce them. Hence comparative pathology is more than experimental pathology, for it must invoke the aid of the same resources that human medicine employs.

At the outset the question presents itself whether in a department of this kind teaching or research is to predominate. A judicious mingling of both is always to be sought; but, sooner or later, one may depress the balance, and decide the fate of the other. Teaching, conscientiously done, is laborious work. The time has gone by when the professor would find his task fulfilled and his students edified by rehearsing for an hour or less a chapter from Billroth's "Surgical Pathology" or Ziemssen's "Encyclopedia of Medicine." Those were good old times for many Faculties never to return. Now a professor should create his lectures by his own researches and testings of the researches of others. He should find the text-books the poorest of all things from which to prepare his lectures. He should have stirred within himself a strong desire to see and hear and feel as much for himself as his resources may permit before he transmits the facts to his students. Research, therefore, should form the background of every teacher's life; and I trust that in comparative pathology that background will not be obscured in the near or distant future by too many students' heads in the foreground. This subject is especially in need of investigators, owing to the meagreness and untrustworthy character of much of its literature, when judged by the standards adopted in human medicine.

Comparative pathology may occupy itself profitably in several different ways: (1) It may ally itself intimately with human medicine by investigating comparatively only those problems which are proposed by the latter, but which cannot be satisfactorily dealt with by it alone. (2) It may undertake problems of an economic character, and direct its attention to the saving of animal life, more particularly from infectious diseases, and thus become of use to the Commonwealth in protecting one of its resources. (3) It may devote itself to questions of interest to general biology and

pathology, since disease may be looked upon as the manifestations of vital activity under special conditions.

The pursuit of any one of these lines of work would in one way or another benefit the others, because the underlying problems are the same in all; but, if there is any one present-day problem which binds them all together, and which goes down to the foundations of all inquiry, it is the problem of etiology, with all its accessory ones of environment, immunity, predisposition and the like. Etiology unites all the sciences, and brings them within the range of the student of medicine. At the same time it makes medicine a truly biologic science, brings it into closer relations with the culture and scholarship of other sciences, and enlists their support in its further development.

Etiology, for the present mainly coextensive with micro-biology, may be divided into two departments, the one dealing with micro-organisms in our surroundings and cultivated by hygiene, the other dealing with micro-organisms as parasites, and belonging to pathology. These two departments, the external and the internal etiology, mutually supplement each other. The pathologist has before him the problems of immunity and susceptibility, of the variability of micro-organisms and of the host, and, lastly, the variable product of these two variables, the different types of disease.

Etiology has thus been thrust into the foreground of medical research because of its intimate relation to and vitalizing influence upon pathology. Just as apparently the same clinical phenomena may be simulated by diverse pathological states, so apparently the same pathological states may be the result of diverse causes. Hence pathology which gives clinical medicine its support, on the one hand, must be supported by etiology on the other.

Though we have learned to recognize many specific living organisms as causes of disease, there are still many animal diseases of an infectious nature whose causes are not known; and these, it seems, should have attention first. When these are cleared up, comparative pathology will have in hand a whole gamut of causes, each of which is capable of arousing certain responses in the animal body peculiar to themselves. With this keyboard before him, the pathologist is well equipped to draw from the animal organism the various dissonances of disease, which in due time will resolve themselves, in the hands of the pure biologist, into the harmonies of the laws of life itself.

But we have scarcely started for this goal. Our present knowledge of disease germs is in many respects inadequate to explain even the current phenomena of disease. We must now search for collateral causes, for the specific microbe is not in all or even in many diseases the sole or efficient cause. There are many unknown conditions which predispose the individual and which govern the outbreak of the disease. What offers better advantages to search for these unknown factors than the manifold infectious diseases of animals as they occur in nature? Not only have we a variety of parasites, but also a variety of hosts: whereas in the human subject we are dealing with but one host, one species; and this host, through his own efforts, holds at bay many kinds or types of disease which still ran riot in the animal kingdom.

Human medicine is thus continually narrowing its own field of observation in certain directions, and the

same is slowly taking place among animals. Only ten years ago that most interesting, because puzzling, of animal diseases, contagious pleuro-pneumonia, covered not a small portion of the eastern section of the United States. Now the student must find his material in other countries, or else go to the English ports where British experts are still condemning our cattle now and then, as afflicted with this disease. Perhaps by a peculiar process, only possible on cattle steamers, do the various harmless varieties of pneumonia become transmuted under the hand of the cow-puncher into the contagious variety, modified in its pathology by a political rather than a germ-proof protection. It is high time, therefore, that, while lending a hand to the eradication of animal diseases, we do not ignore the lessons in pathology and etiology inculcated by them but study them as thoroughly as our means will allow.

Comparative pathology, by devoting itself to the study of infectious diseases, may, as a pioneer, be of great service to human medicine. There are still many important communicable diseases of the human subject whose etiology is quite obscure. There is, in the case of many of these, not even a hint as to the nature of the cause. The pathologist, if he endeavored to follow out all the clews or hypotheses, would be overwhelmed with work. He must follow one or, at most, a few guiding theories. If now comparative pathology, with more material for investigation and better opportunities, is successful in revealing the cause of some animal disease analogous to a still obscure human disease, the lines of inquiry will be narrowed very materially, and relieve the human pathologist from testing barren hypotheses.

But even comparative etiology is a subject of such extent that, unless at the outset we lay out our course, and adhere to it more or less consistently, we may go astray. There are in the main two classes of problems before us, — those that are likely to prove a solution to certain practical questions of the day and those that look to the building up of certain departments of human knowledge, irrespective of their immediate practical bearing. While most of us would prefer to give up our energies to the latter, we cannot shut our eyes to the existence of the former. The demand for so-called practical studies which is penetrating into the halls of the colleges, and which refuses to be silenced, is a demand born of the necessities of the world we live in. My own conviction is that there is as much pure gold of science to be gathered in the working out of problems applicable to the every-day life of the individual and of the State as in other kinds of inquiry aimed much higher. What is needed is the scientific attitude of the mind toward these problems, and, above all, the patience of the world in awaiting the application. The people and their representatives are so often ready to accept a cheap knowledge adapted to the moment, but failing in the long run. On the other hand, culture and scholarship may unconsciously associate practical aims with quackery and money-getting. This alliance is only too often a fact. We are, nevertheless, better situated to-day than in the past. To-day we have sciences to apply. In the past none were ready to be applied, and quackery had wider opportunities. We have no longer any justification to treat matters pertaining to the sanitary and economic welfare of the people in a superficial manner. They must be met with all the resources which science can put at our disposal.

I would therefore in comparative pathology take up the pressing practical problems as they arise. If they cannot be satisfactorily solved, it should be so acknowledged, and the work done credited to the stock of scientific knowledge to be handed to our posterity for future and better investment. No practical work in comparative etiology can be prosecuted without bringing to light hosts of problems of perhaps secondary importance, but clamoring for attention. It is these minor problems which I trust will be of special benefit to medical science, either by furnishing information of direct value or by stimulating fruitful inquiries. In this broad field we may regard ourselves secure from going astray if we hold fast to a certain main course — that of public service. We may then penetrate to the right or to the left as often as we please, or as far as our strength, assistance and equipment permit, only to return refreshed to continue the often thankless task before us.

The need for a better education in animal pathology is well shown by the work undertaken in this country by public authority to restrict, suppress, or eradicate tuberculosis among cattle. Tuberculin produces a temporary fever in all infected animals, whether they be in the earliest stage of the disease or in the most advanced stages. In fact, the not infrequent absence of any lesion after a tuberculin reaction is explained by the statement that the focus or foci could not be detected. There are a large number of cattle slaughtered on the evidence furnished by tuberculin which are in the earliest stages of the disease. A small focus in a mediastinal gland, perhaps, or in one of the throat or mesenteric glands, is all that can be found.

Pathology has informed us that traces of stationary or healed tuberculosis, unrecognized during life, are not infrequently encountered on the *post-mortem* table. Are such persons to be placed within the class of diseased or simply infected? I believe that an infected animal is not necessarily an affected or diseased animal, and that no one can predict just what is going to become of a primary focus, whether it will gradually encroach upon neighboring organs or become generalized, or become calcified or cicatrized.

With these facts in mind, I have always maintained that, of this large percentage of merely infected animals, all are good as food. All over this country, however, so far as I am informed, the beef from these animals is converted into fertilizers. A shameful, wanton destruction of food most valuable to the human system! The cost of animal food is slowly rising beyond the reach of the laboring classes to-day, and a misinterpretation of the significance of these earliest lesions is helping on the scarcity. We are the only nation of a considerable number now dealing with this subject that indulges in this whim of turning good meat into fertilizers. The answers we get in criticising this state of affairs are various. They are: (1) Laws oppose the use of such meat. I would say, only by misinterpretation. Get the law adapted to the facts. (2) People have a feeling or sentiment about diseased meat. I would answer that the public are to be educated, and are not supposed to shape professional advice. (3) It would injure the cause to pronounce so many animals condemned by tuberculin as fit for food. (4) Cows are not worth much any way. It is too much trouble to slaughter them properly. I would answer that economy, the watchword of success in private enterprise, cannot be left out of public business.

The need of the day is men trained to determine whether any given animal is fit for food or not. If the wanton destruction of beef is to continue, the medical profession should see to it that it is not done under the protecting ægis of public hygiene. The profession that has charge of this matter pronounces itself incapable of using scientific data in discriminating between healthful and unhealthful food, and unfitted even for the meat inspection service. The veterinarian by advocating such sweeping measures practically eliminates himself, — sits on the distal end of the limb when he saws it off. For, if the suppression of tuberculosis requires no more discriminating skill than is comprised in the conversion of cattle giving a tuberculin reaction into fertilizers, the work can be intrusted to laymen.

A few years ago the English government determined to wipe out what is there called swine fever by a destruction of all infected herds. They found the task quite impossible, however, as any good bacteriologist who had studied the specific cause might have informed them. They then adopted a milder plan, and removed the apparently well from the sick. By this simple device they lost but a small percentage of the previously infected and now isolated.

A benefit not usually suggesting itself to us, when we consider the trend of comparative studies in disease, is the educational value of the publications. Medical literature must even to-day be considered the literature of a caste, rarely finding its way beyond to the laity. An exception is here to be made in favor of the anti-vivisectionists. Our voluminous periodical publications, designed to fill the intellectual wants and satisfy the literary cravings of all the people, contain only a trifling amount of matter contributed by physicians. Perhaps the people have no desire to become informed upon subjects pertaining to disease. Perhaps the medical profession has no desire to inform them or to spend time valuable pecuniarily in this manner. Whatever may be the reason, the fact remains; and we as unbiassed men may well ask why the abstruse problems of finance, sociology, political economy and astronomy, deserve more attention in the literature of the people than those of biology and medicine. Luckily, two factors are breaking through the partly artificial, partly natural and proper barriers, — the work for the public health, with its documents accessible to everybody interested, and the work of comparative medicine, with its reports also accessible to all. I am inclined to believe, from experience gathered in several fields, that, taking a farmer and an inhabitant of a city of equal intelligence, the former is more accurately informed of the causes of infectious diseases and of rational means of prevention than the latter. The former has been surfeited with authoritative publications dealing with animal disease. The latter has to content himself in the main with the patent medicine columns in our daily press. What comparative medicine, aided by vast sums of money voted by the national government, has been doing for the agriculturist for many years, public health work is destined to do for the urban population, which to-day constitutes such a large percentage of the total population of our country.

To descend more to particulars concerning the organization of work in comparative pathology, I would state that my experience in this matter would lead me to suggest the following plan:

A well-equipped laboratory, divided for convenience into a pathological, a bacteriological, and a biochemic section for advanced work, and a general laboratory for less-advanced students or beginners, a suitable autopsy-room, and a museum for the storing and exhibition of pathological specimens. The material for study must be collected in different ways from large abattoirs and rendering establishments, by voluntary contributions, by travelling and study in other countries or certain sections of our country to which certain diseases are restricted; lastly, by utilizing material furnished by work upon infectious diseases in our own State, carried on under public authority. If these various sources are diligently exploited, there will be no lack of material; nor do I think that there will be a lack of students after the work is once under way, especially of those who intend to enter the public service as health officials, or even of those who wish to attack advanced special problems in comparative pathology, of which there are so many now before us. The plan suggested may be regarded by many as too broad and not realizable. There is no harm, however, in this. A good, broad foundation, even without any superstructure, is always more picturesque than a lop-sided, unsteady building, which we prefer to avoid rather than to enter.

I might weary you a little longer by relating facts and experiences having a more personal coloring. But on this matter I shall be very brief. I might tell of amusing incidents and trying situations in the effort to obtain material for investigation. The human pathologist, comfortably housed in his laboratory or hospital, with all facilities at hand, has no conception of the devious ways and the improvised methods that must frequently be pursued to accomplish a certain purpose. While it is true that the study of animal diseases offers certain advantages over that of human diseases, because of abundant material and opportunity for experimentation, it is also true that many obstacles prevent us from thoroughly utilizing the material or from making experimentation fruitful in results.

The bread cast upon the waters by the student of animal diseases does not always return to him; and that which does often comes in an unexpected manner from unknown quarters, like the conscience money which is sporadically presented to the public treasury. Here is an illustration:

Several years ago, while studying the pathology of bovine tuberculosis, I examined a small herd of cattle condemned by the tuberculin test. I observed in nearly every animal traumatism of the second stomach and of the liver, due to wire hairpins. Inquiry showed that the herd, belonging to a girls' school, grazed over the playgrounds. Some time after a leaflet was printed, calling attention to the danger of throwing pointed metallic objects on pastures. Not many weeks ago I found the following paragraph in one of our Boston papers:

If it is true that Professor Adams, of Pennsylvania, has made an attack upon wire hairpins wherewith he is credited, he has certainly given an ingenious reason for his animadversions upon a highly respected and useless instrument. The announcement that wire hairpins cause disease in cattle pastured near seminaries for young ladies sounds more like a vacation theory than one to be promulgated thus six weeks before the girl-graduates begin graduating all over the land. The wire hairpin is not to be crushed out of existence in any such fashion, although as a matter of fact very few young girls in seminaries nowadays employ the

old-fashioned kind, which has served so many purposes in the past. It is doubtless the invisible hairpin, of charming service in love-locks and scolding-locks, which has proved fatal to the cow of the distinguished educator's acquaintance.

Surely, this is unexpectedly early fruitage from almost self-planted seed. Would that more important subjects rotated as promptly!

Comparative pathology, like any other kind of pathology, draws its breath of life in an atmosphere of experimentation. Without the opportunities for the latter, the money devoted to such a department or professorship might as well be given to promote some other object. I need hardly state that I have in mind the hampering movements of those who with apparently the best of motives wish to wipe out animal experimentation entirely. The situation is a peculiar one. The show of hands rather than the count of heads upon which some of the anti-vivisectionists are depending for their momentum is a method which cannot be successfully paralleled by the handful of laboratory workers, and which must be met by the entire profession. I do not intend to weary you with this subject, especially as the admirable address of Dr. Bowditch is still fresh in our minds. I simply bring it up as one of vital importance to comparative pathology in this over-sensitive age. Very few can work with the zeal or enthusiasm born of a good purpose, with the abandonment in life of all but one aim—that of increasing our power over disease—when they must face the fact that from justices of the Supreme Court of the United States down there are people in all ranks of society who are either convinced, or have thoughtlessly allowed it to be reported that they are convinced, that one branch of the medical profession, and that the one upon which all the other branches lean and towards which they are looking for help in the endless contest with disease, needs to have the arm of the law suspended over it, ready to strike at the slightest untoward movement of the investigator. This is surely a peculiar situation, and one demanding serious thought, if not determined effort.

In what contrast to this almost petty warfare are the quaint, sympathetic words of Mrs. Browning in "Aurora Leigh,"—words which fully recognized the spirit that was to make medicine the great profession of this century!—

How is this  
That men of science, osteologists,  
And surgeons beat some poets in respect  
For Nature,—count nought common or unclean,  
Spend raptures upon perfect specimens  
Of indurated veins, distorted joints,  
Or beautiful new cases of curved spine;  
While we, we are shocked at Nature's falling off,  
We dare to shrink back from her warts and blains,  
We will not when she sneezes look at her,  
Not even to say, "God bless her!"

ASSOCIATION OF THE ALUMNI OF THE ALBANY MEDICAL COLLEGE.—The Proceedings of the Twenty-third Annual Meeting of this Association, which was held on April 14, 1896, which has just been received, contains, beside an account of the Commencement Exercises and Alumni Dinner, the full text of a most interesting address by Dr. Theobald Smith, the President of the Alumni, on Preventive Medicine. The address is chiefly devoted to the function of preventive medicine in purifying water-supplies, and closes with a few words to the graduating class on the duties of physicians as guardians of the public health.

## THE BOSTON Medical and Surgical Journal.

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### THE JUBILEE OF ANESTHESIA.

FIFTY years ago there took place at the Massachusetts General Hospital an event of vast importance to humanity and medicine. Then and there was demonstrated for the first time, that the most serious surgical operation could be performed upon man with entire freedom from pain. It was the work of a brave enthusiast and a courageous surgeon. The semi-centennial of this marvellous and blessed discovery is to be properly commemorated on the 16th of October.

It is well-nigh impossible for us of this generation to fully comprehend the difference which the introduction of anesthesia made in operative surgery. The few survivors of those earlier days only recall the horrors of the operating table at that time. The benumbing influence of opium, the stimulating effect of brandy, then generally employed, could not repress the agonizing outcries, nor prevent the struggles of the patient which bonds alone could control. The effect of this long-continued pain and the shock after every serious operation was an essential element in prognosis. It often determined the impossibility of surgical relief. Now the time required in operating, be it hours, the immediate suffering, the after-effects, are matters of no moment, and the surgeon may conduct the capital or the most delicate operations under as calm surroundings as if practising a preliminary essay upon the cadaver. The "cruel" knife has become an undreaded and magical instrument of relief.

And how far-reaching was this discovery of anesthesia, how greatly has it extended the scope of surgery, minimized the pains of child-bearing and the intensest sufferings in disease, and made humane vivisection and its vast consequent benefits to mankind a possibility. The name of Morton, in this connection, should be held in perpetual honor and gratitude, as one of the great benefactors of mankind.

A committee of the trustees and medical staff of the institution which was instrumental in thus introducing anesthesia to the world has been preparing a fitting

celebration of the event, which promises to be of great interest. Invited guests, including the most distinguished surgeons of all countries and the benefactors of the hospital, will be received by the committee in the old amphitheatre of the Massachusetts General Hospital, which will be restored, as far as possible, to its condition at the time of the first operation under ether by Dr. John C. Warren. Later they will proceed to the new amphitheatre where the public exercises will be held. The medical profession is invited to occupy the semicircular benches. Short addresses will be made by the following gentlemen:

- (1) Address of Welcome, by Charles H. Dalton, Esq., President of the Massachusetts General Hospital.
- (2) "Reminiscences of 1846," by Dr. R. T. Davis, of Fall River, and Dr. Washington Ayer, of San Francisco.
- (3) "Surgery before Anesthesia," by John Ashhurst, Jr., M.D., of Philadelphia.
- (4) "What Anesthesia has Done for Surgery," by David W. Cheever, M.D., of Boston.
- (5) "Relation of Anesthesia and Obstetrics," by John P. Reynolds, M.D., of Boston.
- (6) "The Influence of Anesthesia upon Medical Science," by W. H. Welch, M.D., of Baltimore.
- (7) "The Surgery of the Future," by Charles McBurney, M.D., of New York.
- (8) "The Birth and Death of Pain." A Poem by S. Weir Mitchell, M.D., of Philadelphia.

This is certainly an attractive programme, and although the selection of speakers is national the occasion should command the attention of all the world, for if ether be not the only anesthetic now employed, and the introduction of chloroform for this purpose by Simpson is to be commemorated, as we hear, the successful demonstration of surgical anesthesia was made to the world in Boston a year earlier.

How countless are the multitudes of men and women who should remember this jubilee with grateful hearts.

#### ON THE TREATMENT OF INOPERABLE CASES OF CARCINOMA OF THE MAMMA: SUGGESTIONS FOR A NEW METHOD OF TREATMENT.

UNDER the above head, George T. Beatson, M.D., Edinburgh,<sup>1</sup> discusses a subject of great importance, namely, the treatment of mammary cancer too far advanced for successful operation. Dr. Beatson presents a theory of the cause of these growths which (by what process of reasoning it is difficult to see) he founds upon the views of the etiology of cancer advanced by Cohnheim several years ago, and still held in a more or less modified form by most pathologists. This theory is thus briefly stated in the words of Senn:<sup>2</sup> "The essential tumor matrix is composed of embryonic cells, the offspring of mature cells which for some reason have failed to undergo transformation into tissue of a higher type, and which may remain in a latent and immature state for an indefinite period of time, to become under the influence of either hereditary or acquired exciting causes the essential starting point of a tumor."

<sup>1</sup> London Lancet, July 18, 1896.

<sup>2</sup> Pathology and Surgical Treatment of Tumors. 1895.

Dr. Beatson believes that we must look in the female to the ovaries as the seat of the exciting cause of carcinoma, certainly of the mamma, in all probability of the female generative organs generally, and possibly of the rest of the body. The parasitic theory of cancer he regards as wholly unsatisfactory and misleading.

Acting on the belief that in all cases, cancer of the female breast takes its origin in "some mysterious, subtle influence" emanating from the ovary and so modifying the nutrition of the mammary gland that carcinoma becomes the ultimate product, Dr. Beatson has for several years been in the habit of extirpating the ovaries in inoperable cases of carcinoma of the breast. Several of these cases are fully reported and, according to his statements, show that the operation of oöphorectomy was followed by shrinkage and ultimately fatty degeneration of the carcinomatous growths. These were patients admitted to the Glasgow Cancer Hospital within the last three years, whose condition was noted by surgeons of the staff and by internes, and whose morbid growths, after careful study by the pathologist of the hospital, Dr. Buchanan, were pronounced to be undoubtedly cancerous. In all cases the disease had made rapid extension and the size and fixedness of the tumors and the widespread glandular involvement made extirpation impracticable. Removal of the ovaries was succeeded by immediate diminution in size and vascularity of the growths, abatement of the pain and cessation of the spread, with gradual atrophic changes. If on future trial it be really proved beyond a reasonable doubt that the ovary has an influence in determining malignant disease of distant parts, as the mammary glands, and that removal of the ovaries causes cessation or abatement of such morbid growths, this fact will be a boon to very many that are afflicted, who will gladly part with their ovaries in order to be rid of a painful and fatal disease, or at least to have a respite from pain and a longer continuance of life.

Dr. Beatson adds, that if the theory he puts forward is a correct one, then cancer in the male must be due to some altered condition or secretion of the testicle, for this organ is built up of cells that at one stage of their existence in early fetal life are so identical with those that form the ovary that for some weeks they are not distinguishable the one from the other. "That the testicle has some control over local proliferation of epithelial cells is seen by the yearly growth of the horns in stags, for if a deer is castrated its horns do not grow, and what is more remarkable still, if only one testicle is taken away, it is only the horn on that side that does not grow."

Dr. Beatson, in concluding, urges the following points which sum up his two articles:

(1) "That there seems evidence of the ovaries and testicle having control in the human body over local proliferations of epithelium.

(2) "That the removal of the tubes and ovaries has effect on the local proliferation of epithelium which



occurs in carcinoma of the mamma, and helps on the tendency carcinoma naturally has to fatty degeneration.

(8) "That this effect is best seen in cases of carcinoma in young people, a class of cases where local removal of the disease is often unsatisfactory."

It is difficult to see what connection Dr. Beatson's lucid theory that cancer of the female breast takes its origin in "some mysterious subtle influence emanating from the ovary" and so (!) modifying the nutrition of the mammary gland, has with Cohnheim's theory of the origin of cancer. By whatever theory we explain cancer it is universally admitted to be a disease of degeneration. It occurs most frequently at the time of, or after the menopause; when the mammary gland is undergoing the retrograde changes which take place simultaneously with senile atrophy of the ovaries. This being the case, it is certainly reasonable to infer that the induction of a premature menopause, or the hastening of one already in progress, would, instead of checking the retrograde changes in the breast which predisposes the cancer, increase those changes.

From a theoretical point of view, then, the oöphorectomy would appear to have a bad rather than a good effect upon the growth of a mammary cancer. It is hardly consonant with common-sense to remove the ovaries to check a disease which is most prevalent and active when the ovaries are atrophied and have ceased their functions.

Have we not tried the removal of the ovaries (not to speak of the testicles) for most of the ills which flesh is heir to?

A few years ago some surgeons were in the habit of adding the nervous troubles incident to the menopause to the ills from which neurasthenic women suffered, by removing their ovaries, but it only required for most men a short experience to show that this did not pay. The cautery has now replaced excision for the treatment of slight cystic disease, saving many women from sterility and an untimely onset of the menopause. Can we not let the ovaries rest for a while peacefully in their natural home in the pelvis without subjecting poor sufferers from inoperable cancer to abdominal section in the hope of producing fatty degeneration of their cancers? The disintegration of cancer is a common enough spectacle, and as usually seen, inflicts upon the cancerous subject the necessity of carrying about a nauseous ulcer prominently situated on the centre of her cancerous growth.

But perhaps the fatty degeneration produced by castration is different. At any rate this operation would give the poor, downtrodden gynecologists, whose field (in their opinion) already includes the breast and the whole abdomen, some profitable occupation, which might enable them in these hard times to keep the wolf from the door! No, it will take some very definite reports of amelioration and cure to popularize the operation of oöphorectomy for inoperable cancer. Even for the toxins of erysipelas and

prodigious, which only a short time ago were thought to promise so much, we find a sadly small list of cures reported. What brilliant surgical intellect will give us the next "cure" for cancer? Why not remove the speech centre in the brain for cancer of the tongue or the lumbar enlargement of the cord for cancer of the rectum, if glandular involvement has rendered it inoperable? Could not we find some "subtle, mysterious influence" which would give as great an impulse to cerebral surgery, as Dr. Beatson's suggestions would to gynecological?

#### MEDICAL NOTES.

**SYPHILIS A CAUSE FOR DIVORCE.**—The Paris *Cour d'Appel* has recognized syphilis as a reason for granting divorce.

**APPOINTMENT FOR THE PARIS EXPOSITION.**—Dr. Gilles de la Tourette has been appointed physician-in-chief for the World's Fair of 1900 in Paris.

**MUNICH TO HONOR PASTEUR.**—A committee has been formed at Munich composed of Professor Pettenkofer, Professor Ziemssen and Professor Hans Buchner, in order to obtain funds to erect a monument in honor of Pasteur.

**THE DEATH-RATE OF CHICAGO.**—Chicago, according to the *Medical Record*, has hit upon a cheap and easy method of reducing her municipal death-rate, the means chosen being not the adoption of sanitary measures, but the estimation of the population at a much higher figure than hitherto.

**MONUMENT TO LAVOISIER.**—An international subscription has been started during the past year by the Academy of Sciences (French) to erect a monument to Lavoisier. Up to the present time the amount received has reached somewhat over 47,000 francs. — *L'Union Médicale*.

**THE FIRST WOMEN DOCTORS FROM EDINBURGH.**—The *Medical News* states that Miss Jessie Macgregor and Miss Mona Geddes, of Edinburgh, were two of the one hundred and fifty-one medical graduates from Edinburgh University in the class of 1896. They are the first women to take medical degrees from that institution.

**TAXATION AND DEPOPULATION.**—In a paper which he read recently before the French Academy of Medicine, Dr. Javal stated that the new fiscal laws, which impose severe taxes upon large families, do more toward the depopulation of France, than the institutions of *prévoyance*, and the earnest efforts of the medical profession are able to accomplish toward its counteraction.

**THE BENDER HYGIENIC LABORATORY** in connection with the Albany Medical College, on Lake Avenue adjoining the Dudley Observatory, is completed, and will be ready for use by the classes in histology, pathological anatomy and bacteriology during the



ensuing session. Dr. George Blumer, late of the Johns Hopkins University, has been appointed director of the laboratory.

**A DUMB THERMOMETER.**—A member of the Zurich Medical Society recently exhibited a self-registering thermometer on which there were no degree marks. The instrument could be left with the patient's family, so that some one could take the temperature of the sufferer in the absence of the practitioner, and afterwards the latter could then read the position of the index by means of an attachable scale of glass or metal.

**YELLOW FEVER IN HAVANA.**—According to the report of D. M. Burgess, Sanitary Inspector to the U. S. Marine-Hospital Service, yellow fever is increasing in prevalence and malignancy in the Spanish Army in Cuba. During August the mortality in the military hospitals of Havana alone was 50 per week, with 180 to 150 new cases. "It may be taken for granted," writes Dr. Burgess, "that wherever the Spanish troops go now, yellow fever accompanies them."

**A NOVEL SUTURE.**—According to the *Medical Record*, Greek barber surgeons in the Levant use large ants to keep together the edges of cuts. The ant, held with a forceps, opens its mandibles wide, and as soon as it seizes the edges of the wound has its head severed from the body, but retains its grip. People have been seen with wounds healing held together by seven or eight ants' heads. The kind used is a species of big-headed camponotus.

**AN ASSOCIATION OF NURSES FOR THE UNITED STATES AND CANADA.**—A convention of nurses, representing training-schools and alumni associations, met at Manhattan Beach Hotel on the 2d of September to organize an association of nurses, which shall cover the United States and Canada. A constitution was drafted which will be submitted to the different bodies represented, for their ratification. The object of the proposed association is to unite, protect, and elevate the profession of nursing, and in drawing its outlines those of the medical associations have been to some extent copied, and the preamble of the American Medical Association largely drawn upon. The training-schools and alumni associations included in this convention were the Royal Victoria, the Toronto General, the Massachusetts General, the New Haven, the Presbyterian of New York City, the Bellevue, the New York, the Brooklyn City, the Orange Memorial, the Pennsylvania, University of Pennsylvania, the Philadelphia, the Johns Hopkins, the Garfield, the Rochester City, the Illinois, the Farrand, and St. Luke's, Chicago.

#### BOSTON AND NEW ENGLAND.

**BEQUESTS TO MEDICAL CHARITIES.**—The contest over the will of the late Thomas T. Wyman, of Boston, by which \$400,000, besides the residue of his estate, which is said to amount to \$472,819, is left

to various public charities, has been settled out of court. The will was contested by certain relatives, and it is stated that the amount given to effect the compromise will only slightly diminish the residue of the estate. The following medical charities received \$20,000 each: The Emergency Hospital, the Cambridge Hospital, the New England Hospital for Women and Children, the Boston Lying-in Hospital, the West End Nursery and Infants' Hospital, the Children's Hospital, the Massachusetts Charitable Eye and Ear Infirmary, the Sharon Sanitarium, the Boston Home for Incurables, the Consumptives' Home, the Carney Hospital, and the Perkins Institution and Massachusetts School for the Blind. The residuary legatees are the Massachusetts General Hospital, the Boston City Hospital and the Massachusetts Homeopathic Hospital.

**DARTMOUTH MEDICAL COLLEGE.**—Dr. William Thayer Smith, professor of physiology in Dartmouth Medical College, has been appointed dean of that institution to fill the vacancy caused by the death of Prof. Carleton P. Frost. Prof. Gilman D. Frost has been chosen secretary and treasurer.

#### NEW YORK.

**MATCH FACTORIES AND PHOSPHORUS NECROSIS.**—Mr. Edwin Gould, who owns a large match factory in Passaic, N. J., has recently promulgated an order that all employees who do not present within a specified time a dentist's certificate that their teeth are in a condition of perfect repair shall be discharged. The danger of necrosis of the jaw from the phosphorus used in the manufacture of matches is well known, and he is said to have been induced to take this step by the fact that not long since an employee of one of the Diamond Match factories in Ohio, who had been attacked with necrosis, sued the corporation for \$10,000 damages.

**A LOW DEATH RATE.**—For the past three weeks the city's death rate has continued considerably below the average for the year, the number of deaths reported being, respectively, 746, 751 and 732. During this period there have been but nine deaths from measles, and in the week ending September 19th there was only one. From scarlet fever there were but eight deaths in the three weeks. From diphtheria the number of deaths for the three weeks was, respectively, 21, 24 and 21, and from whooping-cough, 15, 16 and 11.

#### Miscellane.

##### A CASE OF PORRO-CÆSAREAN SECTION.

A CASE of Porro-Cæsarean section, which was successful in spite of the marked disadvantages under which it was performed is reported by Dr. G. M. Boyd, in the *American Gynecological and Obstetrical Journal* for September. The patient was a primipara, who had been in active labor for two days. She was pregnant at term, and the labor was complicated by

the presence of subperitoneal myomata and by a flat rachitic pelvis. The fetal heart could not be heard.

On incising the uterus, which was the seat of many fibroids, foul smelling gas escaped. The uterus was amputated just above the internal os, the cervical canal closed, and the peritoneum sutured over the stump. Although the pulse was 150 at the time of operation, and rose to 180 before it was finished, the patient reacted under treatment by copious enemata of salt solution, and progressed to a rapid recovery. With the abdomen opened, the true conjugate was found to measure 6.5 centimetres.

The success of this case, in spite of the marked difficulties presented by the exhausted condition of the patient, and the septic state of the uterus, makes it a brilliant contribution to the records of the operation.

#### THE TREATMENT OF SNAKE BITES.

DR. L. S. ALEXANDER, of St. Augustine, Fla., writing in the *Medical Record* for September 5th, gives the following account of his treatment of a rattlesnake bite which was successful apparently though the treatment seems to have been complicated:

"Some months ago I saw an article in one of the New York journals concerning the treatment of snake bite with the bile and flesh of the reptile. Having seen the failure of other remedies, I determined to make use of this suggestion at the earliest opportunity. Consequently I directed a taxidermist of this city who had on hand a number of rattlesnakes to prepare a gall bladder for use in an emergency. On or about the 12th of June the same taxidermist, an aged man, was struck on the inside of the left knee by one of his large rattlers. Immediately disposing of the snake, he proceeded to examine the wound, which was bleeding freely. Suction by the mouth, a milking or strapping process with the fingers, with a hunt for and application of some household ammonia, must have taken several minutes before the bottle of bile was thought of. This was applied freely to the wound, and an incision was also made into which the bile was poured. It was probably half an hour before he reached my office, apparently all right but a little anxious. I continued the application of the bile and covered the wound with a piece of the wall of the gall bladder. No other treatment was pursued beyond a few doses of carbonate of ammonium. There was not one particle of swelling, nor did the man suffer from inconvenience of any kind."

#### OPERATIVE TREATMENT OF PARTIAL EPILEPSY.

IN the *Deutsche Medicinische Wochenschrift* for August 27th, Sachs and Gerster of New York give the results of operation in nineteen cases, and arrive at the following conclusions:

(1) Those cases of partial epilepsy are suitable for operation, in which at most one to three years have elapsed since the trauma or the onset of the disease.

(2) In depression of the skull or in other injuries to the skull, operative interference is indicated even after years. The prognosis, however, is less good the longer the elapsed time since the original injury.

(3) Simple trephining may suffice in many cases; this is especially true if one is concerned with skull injury, or with cyst formation.

(4) Excision of the cortical lesion is advisable, if

the epilepsy is of short duration, and referable to an exactly localizable portion of the brain.

(5) Since such lesions are often only visible microscopically, excision should be undertaken even if the diseased part macroscopically appears normal. Still one should, however, use the greatest caution, in order that the proper portion be excised.

(6) Surgical interference in epilepsy occurring in connection with infantile cerebral paralysis is permissible, if it occurs not too long after the onset of the paralysis.

(7) In old cases of partial epilepsy, in which very probably an extended degeneration of association fibres has taken place, surgical interference is entirely useless.

#### SUGGESTION IN URINARY INCONTINENCE.

A FRENCH physician, M. Cullerre, has recently published a piece of work based on twenty-four observations, in which he has succeeded in checking incontinence completely by means of suggestion in twenty cases, helping the affection in two and failing entirely in the remaining two. As a result of his investigation he concludes that suggestion in the hypnotic state is the rational and most efficacious treatment. The degree of hypnosis is not important. He finds that children as young as three may be influenced and helped. The suggestion given naturally varies somewhat with the case, but should always be directed toward removing the idea that micturition will take place unseasonably, as for example, during the night.

So far as ascertainable from the review of the article accessible to us, the cases include only those of so-called functional incontinence and not such as depend upon a cord lesion.

#### REPORT OF A NECROPSY ON A PARACHUTIST.

THE following report, which was published in a recent number of the *British Medical Journal*, is of interest, as showing that syncope is a serious danger to which aeronauts are liable, rendering them unable to make a safe landing after their flight.

Before submitting the facts revealed by the *post-mortem* examination a brief history of the accident will be of interest. On the evening of July 21st a girl, aged 14 years, took her seat and grasped the loop of her parachute to make her first attempt as an aeronaut and parachutist. The balloon, with the girl and parachute, rapidly rose to a height of between 6,000 and 10,000 feet. She then jumped clear of the balloon, and came down swiftly for a distance of about 300 feet before the parachute opened; it righted itself with a jerk and began to spin round. The girl was noticed to throw her legs about a good deal; there was a considerable amount of wind at the time, and the girl was carried over the river, into which she descended and quickly disappeared. She was attached to the parachute by clips, similar to watch clips, passing from each shoulder. A Board of Trade lifebelt was carefully secured round her waist. The body was found in about three days detached from the parachute; the clips were uninjured.

*Post-mortem Examination.*—External examination: discoloration of forehead between eyes, a large bruise over front part of left side of head above and behind the ear, an abrasion of skin over back of right forearm. The body was well nourished, but not fully developed. Cutis aserina present. Tongue swollen and indented by the teeth, mouth and pharynx contained mud and sand. On dissec-

tion of the vertebral column no dislocation or fracture was discovered. No fractures or dislocations discovered anywhere. Internal Examination: Thorax: the heart and pericardium normal in appearance, the cavities of the heart were found perfectly empty, the valves and endocardium smooth and healthy; the lungs were inflated, the pleural surfaces of the left were adherent almost all over, on the right normal; diaphragm normal. On opening the trachea it was found to contain mud and sand, the small bronchial tubes were found to contain mud, sand and froth. The esophagus was empty. Abdomen: liver congested; on opening the stomach it was found perfectly empty, there was a small cicatrix on the posterior surface near the cardiac orifice.

On consideration of these facts we considered ourselves justified in coming to the conclusion that the girl was probably in a state of syncope when she reached the water, and that death was due to drowning.

JAMES HUXLEY, L.R.C.P., L.R.C.S., Edin.

W. JONES GREER, F.R.C.S., D.P.H., Irel.

Newport, Mon.

### THE ARMY MEDICAL SERVICE IN ENGLAND.

THE *British Medical Journal*, in a recent editorial article, deploras the lamentable condition to which the army medical service has been reduced by the policy of neglect and contempt pursued by commissioned officers of the line toward their fellows of the medical staff. The allusion to a medical officer who had shown distinguished gallantry in action, as "that brave civilian" by the late commander-in-chief of Her Majesty's army, is a fair example of the regard felt for medical officers by the line officers of the army, who exclude the medical officers from service clubs, and regard them as social inferiors. As the *Journal* remarks, "the army doctors . . . are of like nature, passions, and aspirations as other men; and, as men of education, holding a recognized social status in civil life, are not prepared to enter and serve in the army except on terms of reasonable equality with their fellow commissioned officers."

It is not to be wondered at then that it is difficult to induce men of good position and education to enter the army medical service.

At a recent examination of candidates for this service, only twenty-six candidates came forward for the advertised twenty-five vacancies, and fifty per cent. of the misnamed "competitors" failed to get the 1,800 marks required out of a total of 3,600.

"But more than this," says the *Journal*, "the actual vacancies are nearer forty than twenty-five, and young officers, instead of completing their necessary preliminary training, are being pressed into full duty at once. The resources of the Director-General are already fully taxed to make arrangements for peace duty; and he, no more than any other administrator, can be expected to make war bricks without straw. Two men cannot be made to do the duty of three indefinitely, without break-down. Let any one imagine the condition of medical efficiency should we be suddenly called upon to place in the field our two army corps supposed to be always ready for mobilization. The military heads of the army are just as responsible for the preparedness and efficiency of one branch of the service as another, or for all; they will not therefore be without excuse if they fail to grapple with a medical crisis, any more than with a deficiency in ammunition."

The remedy suggested for this state of things by the *Journal*, is the establishment of an Army Medical Corps in place of the "Medical Staff," which term is anomalous, as applied to executive medical officers. Medical companies in different commands and districts would then be officered exactly as those of other branches, and wherever practicable, medical nurses would be established and subsidized. This plan, the editor of the *Journal* thinks, would give the officers and men of the medical service a status which they do not at present possess, and make them of and not merely in, the Army, which latter and impossible position is daily brought home to them in regulations and usages both military and social.

Whether such a remedy as this would be efficient in putting an end to the brutal disregard for the gentlemen of the medical staff by the officers of the line admits of question. The cause seems to lie somewhat deeper, in snobbish and ignorant disregard of the education and qualifications which must necessarily be possessed by a competent medical officer, and the fact that the mental and scientific acquirements must of necessity far exceed those which are necessary to secure fitness for a position among the officers of the line.

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 12, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York . .	1,892,332	751	333	15.60	11.83	8.58	1.80	3.64	
Chicago . . .	1,678,967	401	174	33.50	22.75	20.00	5.00	5.75	
Philadelphia .	1,164,000	3-5	146	16.12	11.18	5.98	2.08	5.72	
Brooklyn . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . . .	560,000	—	—	—	—	—	—	—	
Boston . . . .	494,206	196	70	18.87	11.73	11.22	3.57	3.06	
Baltimore . .	496,315	175	65	18.34	7.98	10.83	4.56	2.85	
Cincinnati . .	386,000	104	32	16.49	17.43	4.85	3.88	3.88	
Cleveland . .	314,637	—	—	—	—	—	—	—	
Washington .	275,500	90	38	19.98	10.00	8.88	4.44	5.55	
Pittsburg . .	238,617	—	—	—	—	—	—	—	
Milwaukee . .	276,000	—	—	—	—	—	—	—	
Nashville . .	87,754	39	10	25.60	17.92	12.80	5.12	5.12	
Charleston . .	65,165	30	4	10.00	33.33	3.33	—	—	
Portland . . .	40,000	—	—	—	—	—	—	—	
Worcester . .	98,687	—	—	—	—	—	—	—	
Fall River . .	88,020	41	17	29.07	6.46	19.38	—	6.46	
Lowell . . . .	84,359	35	29	26.64	4.44	17.77	6.66	2.22	
Cambridge . .	61,519	43	25	36.28	11.65	32.62	—	2.33	
Lynn . . . . .	62,335	37	14	37.80	16.20	24.30	5.40	8.10	
New Bedford .	55,254	27	—	18.50	14.80	3.70	7.40	—	
Springfield .	51,534	14	9	50.08	7.14	50.00	—	—	
Lawrence . .	52,153	22	7	33.20	8.30	29.05	4.15	—	
Holyoke . . .	40,149	20	9	20.00	5.00	20.00	—	—	
Salem . . . .	34,437	—	—	—	—	—	—	—	
Brookton . .	33,157	14	7	21.42	—	21.42	—	—	
Haverhill . .	30,186	8	4	12.50	12.50	—	—	—	
Malden . . . .	29,709	12	3	—	—	—	—	—	
Chelsea . . .	31,296	15	8	33.33	13.33	26.68	—	—	
Fitchburg . .	26,894	11	7	63.63	9.09	54.54	—	—	
Newton . . .	27,022	—	—	—	—	—	—	—	
Gloucester . .	27,663	10	5	40.00	10.00	40.00	—	—	
Taunton . . .	27,093	7	0	14.28	14.28	14.28	—	—	
Waltham . .	20,877	8	4	50.00	—	37.50	12.50	—	
Quincy . . . .	20,712	7	2	28.56	—	28.56	—	—	
Pittsfield . .	20,447	3	8	33.33	—	33.33	—	—	
Everett . . .	18,578	8	1	—	25.00	—	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport .	14,564	8	0	—	—	—	—	—	
Amesbury . .	10,920	—	—	—	—	—	—	—	

Deaths reported 2,633: under five years of age 1,064; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 665, diarrheal diseases 326, consumption 290, acute lung diseases 206, diphtheria and croup 110, typhoid fever 71, whooping-cough 34, cerebro-spinal meningitis 10, measles 6, scarlet fever and erysipelas 4 each.

From whooping-cough New York 16, Chicago 7, Philadelphia 6, Boston 2, Washington, Lowell and Taunton 1 each. From cerebro-spinal meningitis Washington 3, New York and Lynn 2 each, Worcester, Brockton and Chelsea 1 each. From measles New York 4, Chicago and Pittsfield 1 each. From scarlet fever Philadelphia 2, New York and Chicago 1 each. From erysipelas Chicago 2, New York and Philadelphia 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending September 5th, the death-rate was 16.5. Deaths reported, 3,432; diarrhea 222, diphtheria 76, whooping-cough 68, measles 66, fever 55, scarlet fever 49.

The death-rates ranged from 9.3 in Croydon to 21.7 in Bolton: Birmingham 17.9, Bradford 17.3, Bristol 17.9, Halifax 13.2, Hull 17.9, Leicester 17.1, Liverpool 19.9, London 15.4, Manchester 21.0, Newcastle-on-Tyne 15.5, Nottingham 16.3, Portsmouth 11.7, Sheffield 20.3, Swansea 11.6.

### METEOROLOGICAL RECORD

For the week ending September 12th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.	Relative humidity.	Direction of wind.	Velocity of wind.	We'th'r.	Rainfall in inches.
	Daily mean.	Daily mean. Maximum. Minimum.	8.00 A. M. 8.00 P. M.	Daily mean.	8.00 A. M. 8.00 P. M.	8.00 A. M. 8.00 P. M.	
S...6	29.84	67 76 58	98 98 98	S.W.	S.W.	O. F.	2.10
M...7	30.01	67 77 57	81 65 73	W.	N.W.	C. C.	
T...8	30.19	61 66 56	77 68 72	N.	N.	O. C.	
W...9	29.96	60 63 57	80 100 90	N.	N.E.	O. R.	.27
T...10	29.75	62 66 58	100 95 98	N.E.	N.W.	O. C.	1.46
F...11	30.00	78 90 65	87 80 84	W.	S.W.	C. C.	.02
S...12	30.14	70 76 64	78 100 89	S.W.	N.E.	O. G.	
							3.85

\* O., cloudy; C., clear; F., fair; U., fog; H., hazy; S., smoky; R., rain; T., threat-  
ening; N., snow. † Indicates trace of rainfall. ☉ Mean for week.

### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 12, 1896, TO SEPTEMBER 18, 1896.

CAPTAIN W. FITZHUGH CARTER, assistant surgeon, will be relieved from duty at Fort Sill, Oklahoma Territory, October 1, 1896, and ordered to Baltimore, Md., as attending surgeon and examiner of recruits.

FIRST-LIEUT. WILLIAM E. PURVIANCE, assistant surgeon, is relieved from duty at Fort Sherman, Idaho, and ordered to Fort Columbus, N. Y., for duty, relieving FIRST-LIEUT. THOMAS J. KIRKPATRICK, JR., assistant surgeon.

FIRST-LIEUT. KIRKPATRICK, on being thus relieved, is ordered to Fort Douglas, Utah, for duty, relieving FIRST-LIEUT. GEORGE D. DE SHON, assistant surgeon.

FIRST-LIEUT. DE SHON, on being thus relieved, is ordered to Washington Barracks, D. C., for duty.

CAPTAIN WILLIAM B. DAVIS, assistant surgeon, is relieved from duty as attending surgeon and examiner of recruits in New York City, to take effect upon the completion of his examination for promotion and ordered to Fort Brady, Mich., for duty, relieving CAPTAIN CHARLES RICHARD, assistant surgeon.

CAPTAIN RICHARD, upon being thus relieved, is ordered to New York City as attending surgeon and examiner of recruits.

CAPTAIN LOUIS BRECHEMIN, assistant surgeon, is relieved from duty as attending surgeon and examiner of recruits, Baltimore, Md., to take effect on completion of his examination for promotion, and ordered to Fort Sherman, Idaho, for duty.

### OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING SEPTEMBER 15, 1896.

CARTER, H. R., surgeon. Granted leave of absence for twenty-four days from September 15, 1896. September 14, 1896.

STONE, J. B., passed assistant surgeon. Granted leave of absence for thirty days from September 24, 1896.

STIMPSON, W. G., passed assistant surgeon. Granted leave of absence for thirty days from date of being relieved by Passed Assistant Surgeon, S. D. BROOKS. September 14, 1896.

EAGER, J. M., passed assistant surgeon. Granted leave of absence for sixty days from December 1, 1896. September 2, 1896.

PROCHAZKA, EMIL, assistant surgeon. To proceed from Detroit, Mich., to Cairo, Ill., for temporary duty for thirty days from October 1, 1896. September 12, 1896.

CUMMING, H. S., assistant surgeon. Granted leave of absence for twenty-six days from October 25, 1896. September 15, 1896.

### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 19, 1896.

DANIEL McMURTRIE, medical inspector, promoted to medical director from September 3d.

L. G. HENEBERGER, surgeon, detached from Naval Hospital, Widow's Island, Me., ordered home and then await orders.

### SOCIETY NOTICES.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.—A regular meeting of the Society will be held on Wednesday, October 7, 1896, at 12 o'clock, in the hall at 19 Boylston Place, Boston.

The usual business will be transacted and the following papers will be read:

"Observations on the Iodo-Spermatic Reaction," by Wyatt Johnston, M.D., of Montreal.

"A Report of Three Deaths from Head Injury," by Frederick H. Baker, M.D.

"The Cohen Murder," by T. H. O'Connor, M.D.

JULIAN A. MEAD, M.D., Recording Secretary.

THE TRI-STATE MEDICAL SOCIETY.—The eighth annual meeting of the Tri State Medical Society of Alabama, Georgia and Tennessee, will be held in Nashville, Tenn., Tuesday, Wednesday and Thursday, October 13, 14 and 15, 1896.

### BOOKS AND PAMPHLETS RECEIVED.

Special Report of the Kensington Hospital for Women from its Organization in 1883 until 1896.

Technic of Abdominal Salpingo-Oophorectomy without Pedicle. By T. J. Watkins, M.D., of Chicago. Reprint. 1896.

Index Catalogue of the Library of the Surgeon-General's Office, U. S. Army, Second Series, Volume I. Washington: Government Printing Office. 1896.

The Treatment of Cancer of the Rectum. External Hemorrhoids, with Special Reference to their Treatment. By Lewis H. Adler, Jr., M.D. Reprints. 1896.

Nouvelle Méthode de Traitement de la Tuberculose Pulmonaire. Du Lieut.-Col. G. M. Carasso, Docteur en Médecine, Directeur de l'Hôpital Militaire de Gènes.

Transactions of the Association of American Physicians, Eleventh Session, held at Washington, D. C., April 30, May 1 and 2, 1896. Volume XI. Philadelphia. 1896.

Royal Infirmary Cliniques. By Alexander James, M.D., F.R.C.P.E., Physician to the Royal Infirmary, Edinburgh. Edinburgh: Oliver & Boyd, Tweeddale Court. 1896.

The Frequent Dependence of Insomnia, Mental Depression and other Neurasthenic Symptoms upon Disease of the Gastro-Intestinal Tract. By Boardman Reed, M.D., Atlantic City, N. J. Reprint. 1896.

The Causes and Mechanism of Retroflexion and Retroversion of the Uterus. Tears of the Rectum in Abdominal Operations for Pyosalpinx and their Treatment. By Hunter Robb, M.D., Cleveland, O. Reprints. 1896.

Food in Health and Disease. By I. Burney Yeo, M.D., F.R.C.P., Examiner in Medicine at the Royal College of Physicians; Professor of Clinical Therapeutics in King's College, London, etc. New and revised edition. Philadelphia: Lea Brothers & Co. 1896.

Rheumatism, Its Nature, Its Pathology and Its Successful Treatment. By T. J. MacLagan, M.D., Physician in ordinary to their Royal Highnesses Prince and Princess Christian of Schleswig Holstein. Second edition. London: Adam & Charles Black. 1896.

A New Operation for Certain Cases of Prolapsed Uteri. Drainage versus Radical Operation in the Treatment of Large Pelvic Abscesses. Suspensio Uteri with Reference to its Influence upon Pregnancy and Labor. By Charles P. Noble, M.D. Reprints. 1896.

A Vest-Pocket Medical Dictionary, embracing those Terms and Abbreviations which are Commonly Found in the Medical Literature of the Day, but excluding the Names of Drugs and many Special Anatomical Terms. By Albert H. Buck, M.D., New York City. New York: William Wood & Co. 1896.

## Original Articles.

## INTRADURAL SECTION OF THE SPINAL NERVES FOR NEURALGIA.

DR. ROBERT ABBE, M.D., OF NEW YORK.

## SYLLABUS.

(1) Brief report of three cases in which parts of the posterior roots of the brachial plexus were divided or resected at their origin from the cord (intradural) for neuralgia.

(2) Consideration of effect on sensation, theoretical and practical.

(3) Consideration of the class of cases of ascending neuritis to which such operation might apply, and of the difficulty of diagnosis from hysteria.

(4) The relative innocence and simplicity of intradural spinal surgery, if properly done.

NEARLY eight years ago I operated upon the first of three cases of intradural section of the posterior spinal roots which are presented for discussion this evening. Although two have been reported six years since, I repeat their histories in this connection as it is necessary for comparison in the group. They were included with a number of spinal operations I had done, and I then said, I "had no rose-tinted picture of startling achievements in spinal surgery."

To-day it may be said that spinal as well as brain surgery is quietly adding experience to experience, and we must pass by the *very few* brilliant results that have been obtained, to give our attention to more serious study of the cases which may yield fruit later, though not attaining wonders at first.

The unusual character of this operation and the fact that I have been able to keep the patients under observation and report the end results, after periods of from two to eight years, imposes a duty upon me of recording whatever may be of interest in them.

I am stimulated further to do this by questions occasionally received from correspondents, as to whether this operation would help certain neuralgic cases.

With equal implied questioning Mansell Moullin refers to the report of my first case, of which operation he says, "but whether with permanent benefit is not yet known."

The three cases I ask your attention to were all men in young middle life and in each the arm was the seat of trouble.

CASE I. Mr. I. R. T. is forty-four years of age, an iceman. He was referred to me three months ago by Dr. C. L. Dana, of New York, to see if I were willing to undertake an operation, conceived by him, to relieve the patient of one of the most intractable of neuralgias of the right brachial plexus, appearing in the arm and forearm. The essential features of the operation were carried out as planned from the first by Dr. Dana. The patient's history is as follows:

Prior to this trouble he had no disease — rheumatism, malaria or specific. During the war an exploding shell left a small piece of itself in his left shoulder, which was extracted on the field, and left but a small flesh scar; never otherwise injured. One year ago last May, he spent a day putting in a zinc lining in a butcher's large refrigerator, and on the night following he first had a throbbing pain, localized in a single spot on the posterior surface of the right forearm, above the middle. The pain kept him from sleep. It was continuous at that site, but about one week later there was added a paroxysmal pain giving a peculiar twitching sensation in the thumb, index and middle finger of the same hand.

He was treated by electricity, blisters, counter-irritants and internal medication, by excellent doctors, but his arm grew steadily worse. The pain was still localized over the forearm, and supplemented by the paroxysms of painful twisting sensation. There seems to have been distinct muscular spasm with the sensation of pain.

During the spring of last year there had ensued a disablement of the hand. The fingers were not readily closed nor extended. The hand was kept in a stiff position, the fingers semiflexed. The forearm and hand were slightly emaciated. There was atrophy of muscle in the interosseous spaces. Dr. Dana and others then saw him, and a diagnosis of ascending neuritis was arrived at. At this time he came under the care of Dr. W. T. Bull, at the New York Hospital. After a week the patient begged an operation, and the doctor stretched the posterior interosseous and ulnar nerves. The pain was not improved. If anything, it was worse.

On July 16th, at the patient's earnest request, the arm was amputated by Dr. Bull above the humeral insertion of the deltoid, and above any site of local pain heretofore complained of. The wound healed by first intention. As far as the eye could judge, all nerves in the arm were in a normal condition. When the wound had healed it was found there was no abatement of pain. It still had a "drawing" character, and he could feel the fingers twist just as if they were on. He left the hospital August 1st, if anything, complaining of more pain than before. He then came under the care of Dr. William Kemp, of New York, who again sought Dr. Dana's counsel. The patient had now got in the habit of taking morphine, one-half grain every hour, to destroy the pain.

Of this interview Dr. Dana writes me thus:

"On September 25th I examined him again. The arm had been removed. The patient said he felt no better. There were twitchings and tonic contractions in the muscles of the stump. The patient had the Brauch-Romberg symptom, swayed in standing, and had a tendency to fall to the right when walking with eyes closed. Knee-jerks exaggerated and ankle clonus in right leg, all of which might be due to the morphine he was taking. There was much stiffness in the neck muscles. The patient could not rotate his head completely to the right, nor draw the head down to the right shoulder. The diagnosis so far had been neuritis — and of this there could be no doubt. The question was whether it might be due to a tumor or inflammatory process, either extra-spinal or extra-dural. An exploratory operation was advised with the idea, if no tumor was found, of cutting the posterior roots of the nerves transmitting pain. If it were a tumor, that could be removed. If it were ascending neuritis, cutting or resecting the nerve might stop it; while cutting the posterior roots would cause an ascending degeneration and destroy the sensory tract, even into the spinal cord."

At this juncture he went to Dr. Seguin for a month, and returning to Dr. Dana, was sent to me at St. Luke's Hospital. His condition then was as follows:

November 2d. Had grown thin, was careworn, and hollow under the eyes. Appetite fair, tongue coated. No fever. He gives evidence of sharp pain, every few minutes, in the stump of his right arm, and usually doubles over and grasps the stump with the other hand. When asked about it, says it jumps and the stump draws to his side when the pain shoots into the hands and fingers, as if they were still on, and he can feel them all drawn up. The pain seems to be genuine, and the recurrence every five or ten minutes. He

says, also, that it keeps up all night. Muscular atrophy is beginning to be marked about the shoulder, either from disuse or degeneration. The deltoid, supra- and infra-spinati, and biceps are atrophied; while the latissimus dorsi and pectoralis major are short and thin, but still act strongly when called upon. A small, tender neuroma of the musculo-spiral nerve in the stump can be felt, and on pressure gives the same pain as is generally complained of.

November 7th. Dissected out the neuroma under cocaine.

November 24th. Not relieved by the removal of the neuroma. Urine 1.024, no albumin or sugar. Some oxalates.

December 31, 1888. Operated under ether, Dr. Bangs assisting, in the presence of a number of prominent neurologists and surgeons. The usual surgical precautions were carried out. An incision was made along the ligamentum nuchæ, on the right side, from the third cervical spine to the first dorsal. The soft tissues were quickly separated from the spine, and the right half of all the laminæ well out on the articular processes. With rongeurs the laminæ were quickly gnawed away from the spine to articular processes — thus bringing into view the rather full pulsating dural membrane of the cord.

The seventh, sixth, fifth, and half the fourth vertebræ were thus treated. Severe venous bleeding from under the latter was only controlled by an aneurism-needle protected by cotton and hooked up beneath the bone. Over two inches of dura was exposed. It was soft and allowed the finger pressure to feel the cord. No tumor was thus detected, nor did a director passed up and down the canal feel anything like tumor. There was no inflammation or disease of the hard parts. With a heavy curved hook I then explored the intervertebral foramina, and drew back the sixth nerve by hooking under it and pulling gently, so that a short loop of it was raised on my hook outside its point of exit from the dura, but inside the vertebral canal. Upon this root, thus raised, I applied a small metal electrode, while the opposite pole (a sponge electrode) was held on the back. Dr. Dana noted the effect. The same was tried on the seventh nerve, with less effect. My own observations, as did those of Professor Markoe and others, coincided with Dr. Dana's. He writes: "on the day of the operation, a faradic battery of one cell, moderate current, was used. A sponge electrode on the back, a metal point electrode on the nerve. When applied to the sixth nerve, just external to the dura, it caused contraction of the supra- and infra-spinati, rhomboid, latissimus dorsi, pectoralis major, teres and deltoid. The results of electrizing the seventh nerve were not so satisfactory, it not being certain that the point reached that nerve alone (on account of fluid that collected around the electrode). It was impossible to drag out the fifth nerve without exciting more hemorrhage from the venous sinus." The eighth nerve also was hidden below the bone, and it was thought enough had been done. The sixth and seventh were then again raised up from their beds and cut square across just outside the dura. Both motor and sensory roots lie together at this point, so that they must have been severed. The wound was packed, entirely open, with iodoform gauze covered by a voluminous gauze dressing. He bore the operation well, but soon found his old pain seemed much the same — still low down in the hand.

January 2d. Forty-eight hours after the operation I felt that I ought to divide at least one more branch (the eighth) if I could do so, in order to reach the lower arm pain. I therefore determined to proceed as follows: place the man prone, without ether, and open the dura, so as to get a clew to the sensations of the nerve-roots when handled. With the assistance again of Drs. Dana, W. T. Bull and others, I operated.

The patient was placed under a brilliant light, face downward, so as to maintain the operated part as the highest of the spinal axis. I carefully removed the packing, revealing a large, clean, dry wound, at the bottom of which lay the dura, throbbing and sound. Puncturing it with a knife, I slipped in a fine director and slowly let out the spinal fluid until it ceased to run. Then I slit up the dura for one and a half inch. The cord and membranes looked sound. The effect of evacuating two ounces of spinal fluid (carefully collected and measured) was practically *nil*. The pulse did not change, and he experienced no sensations or pain. The dura was scarcely at all sensitive to cutting. I now picked up the roots of the eighth nerve within the dura at the level of the seventh nerve outside.

It looked normal, but I cut it close to the posterior columns of the cord, and then stripped off one-fourth of an inch for microscopical examination. Handling this nerve-root gave him the greatest pain of anything I had done, and of a kind exactly corresponding with that from which he constantly suffers. I had reason to hope, therefore, we had reached the offender. In addition I cut also the posterior roots of the seventh nerve, close to the columns of the cord.

In two operations, therefore, I had cut the sixth nerve, both roots, outside; the seventh, both roots outside, and also the posterior root inside; the eighth posterior roots only inside the dura. It was observed that the contact of even a blunt instrument to the posterior columns gave a sharp agonizing pain over the entire body, the patient crying out, "Ah! I *can't* stand it."

We again tried the battery, and with regard to it Dr. Dana writes: "On the second trial, the patient being conscious, stimulation in the same way — of the peripheric end of the cut sixth nerve — caused contraction of the supra- and infra-spinati and rhomboid. Of the seventh nerve, contraction of the pectoral, latissimus dorsi, and adductors of the arm, with pains such as he usually suffers. Of the eighth nerve, similar contraction and intense 'drawing pains,' exactly such as are usually felt."

The slit in the dura was now sutured with fine catgut. A little cocaine had been injected subcutaneously along the skin half an hour before, and this allowed of painlessly suturing the entire length of the wound. Immediate union was obtained by second intention, and leaves a small linear scar. The patient had more or less pain in the arm in the next ten days, but it changed in character. It no longer went down into the fingers. It was a "drawing of the stump," as he expressed it. It ceased to go up on the shoulder as it once did. He was allowed enough morphine to quiet pain for eleven days, when I deemed it best to let him sit up and stopped the drug entirely.

He missed it but quickly got used to it, and since has had even less pain than when he was getting his morphine to quiet it. He walked freely at the end of the third week, and soon went out in the open air.



His temperature was 101° F. on the second day, and 102° F. on the fourth, but declined from that to normal on the tenth. There is anesthesia of the skin of the entire outer side of the arm from the deltoid region downward, extending across the neck from the centre of the clavicle to the centre of the scapula. This area of the skin showed a short period of irritability, without sensation, from the fourth to the eighth day after the root section, as shown by getting quickly and persistently suffused when brushed over or handled; but when pinched retaining an extreme blanching at that point, which did not recover for two or three minutes. This entire area is now, however, normal in appearance.

The subsequent history of this patient is as follows: His morphine habit was in abeyance for a year or two, and he gained twenty pounds in weight. At the end of four years he complained that he still had some shooting pain in the stump and the drawing feeling in his fingers of the amputated arm. At the time he had again resorted to morphine, using a grain daily; and was seeking an increase in pension—for this reason, I discounted his complaints. His stump showed cutaneous anesthesia of the outer half extending up over the deltoid. Between seven and eight years after operation he still complains of the drawing pain in his amputated fingers for which he takes one and one-half grains of morphine daily. He is living in the suburbs of New York and maintains his health.

**CASE II.** Intractable brachial neuralgia: intradural division of the posterior roots of the sixth, seventh, and eighth cervical and first dorsal nerves.

Gabriel Z—, aged forty-five. Patient gives no history of rheumatism or syphilis, but has had malaria at one time.

In the latter part of 1886 he states that he exposed his arm at the window of a street-car while he was in a perspiration and he dates the beginning of his trouble from this time. A few days afterward he experienced sharp pain between his thumb and index finger. This grew steadily worse and at length became located on the outer side of his forearm and was accompanied by a feeling of drawing and twitching of the little and ring fingers as well. The pain extended up the forearm. It was intermittent, but of such severity as to cause him to cry out. After two months he grew weak and nervous, lost his appetite and suffered so much that he had to give up his business. The attacks were paroxysmal and the sensation described by the patient was that of a "drawing pain," the acute seizure leaving some continuous pain and soreness on the ulnar side of the hand and arm.

In August of the following year his ulnar nerve was stretched by Dr. L. A. Stimson. The pain grew steadily worse, the attacks coming on more frequently at intervals of half an hour. The pain spread over the forearm and hand, and in July, 1888, the ulnar nerve was excised by Dr. Fluhrer. Following this the pain recurred in an exaggerated form, and the nerves of the brachial plexus were stretched in the axilla by Dr. Gerster. The paroxysms became even more severe, coming on every five minutes during the day and every half-hour in the night.

After the first operation the forefinger became drawn backward and the forearm wasted. The patient took to morphine in large quantity with only temporary relief.

On February 9, 1889, the patient came under my care. Examination showed him to be a rather intelligent man, of spare physique. He bears evidence of long suffering and has a haggard expression. His attitude is peculiar; he sits with his head bent forward and his body bent so that his left elbow rests upon his knee, his right hand grasping his forearm, the elbow semiflexed. At intervals of a few minutes he is seized with violent paroxysms of pain which he describes as of a "drawing" character extending from the fingers up the forearm, as though his fingers were being drawn away from his hand and his hand from the forearm. He has a habit of shouting with these attacks of pain, which have made him a source of dread in the neighborhood of his residence. Grasping his arm he will walk the floor in agony for from three to five minutes until the pain subsides. The night attacks are similar to those of the daytime, although not so frequent. Sleep is of course only fragmentary. Urine showed specific gravity 1.009, no albumin. The flexor actions of the hand are very feeble. The intrinsic muscles of the hand are atrophied, the thumb and middle finger being constantly in a sweating condition. He can raise his hand to his head. The deltoid is atrophied. Triceps in good condition. Infraspinatus atrophied. He requires hypodermics of morphine about every two hours to render him at all comfortable—one-sixth of a grain.

On consultation it was thought possible to bring about sensory anesthesia by operation upon the sensory roots of the brachial plexus.

On the day following the operation the patient passed a very comfortable time, using less morphine.

On the second day he had but one hypodermic and slept two hours, taking his nourishment well.

The third day he complained of pain in the shoulder and arm, but had a fairly comfortable day and slept for four consecutive hours.

On the fifth day he had severe pain in his head and some mental excitement; took nourishment well. This day there was recurrence of his sharp attacks.

On the seventh day wound was dressed and he was more comfortable. He was allowed to get up, as it was found impossible to keep him quiet in bed.

On the eighth day he suffered less from pain.

From the ninth to the fifteenth day the old pain continued, though less severe.

At the end of four weeks the patient was discharged in a condition of moderate improvement in the matter of pain.

The morphine habit had been entirely checked.

Two months after the operation I visited him at his house. He was much improved in general condition and doing well. He still maintained the habit of leaning his head down and seemed to be in pain. He was, however, easily diverted, and if entertained seemed free from paroxysms for considerable intervals. His actions suggested those of a man craving attention and gave me the impression of one desirous of continuing the appearance of suffering. He had entirely stopped the morphine habit and had stopped crying out as formerly.

Examination showed the arm and shoulder appearing as before. The muscular power was unchanged. Anesthesia seemed complete on the left hand, front, and back up to an inch or two above the wrist, over the entire dorsum of forearm and side and dorsum of upper arm half-way above the elbow to the shoulder.



Above the middle of the arm to the shoulder there was no anesthesia.

Dr. F. H. Strong, of Yonkers, under whose care this patient had long been, wrote me that he found him decidedly better, and that he thought the amount of physical suffering which he really felt was now comparatively insignificant.

Soon after this the patient had a severe attack of diarrhea, and lapsed into a low muttering delirium, showing no evidence of pain while in this condition. For one month he continued to have delusions. He then improved rapidly and commenced having pains in the wrist, though not as before. Two months subsequently he began again to suffer pain and howled during the paroxysms. Three months after the operation his mind was perfectly sound, but he complained again of his pain and was despondent but did not scream out. The subsequent course of his trouble during the year has been a mild type of the same evidence of pain as before the operation. The pain does not now cause him to shout. The anesthesia remains the same.

Dr. Thacher's pathological report of the resected roots, says: "Inflammatory exudation quite marked at portions of the surface and less marked at a few points inside some of the roots. The changes are most marked in and around the root of the first dorsal."

At present the patient is in good general health and excellent mental condition. Under constant observation of a most intelligent physician, who reports that his subjective evidence of pain is relatively very slight. He has occasional paroxysms that make him call out; but unless some one is watching him to call his attention to the arm, he will play cards or talk with friends for hours at a time without sign of pain.

The physical condition of the hand is not different from that before my operation except as to anesthesia. He has diminished tactile sense for the ulnar and median distribution, and pain sense for the ulnar and median lost (analgesia). Above the elbow there is no apparent gross disturbance of senses.

The patient never requires anodynes, and his physician thinks much of what he still calls his pain is a memory sense.

CASE III. M. L. H., a florist, aged forty, came to me in May, 1890, with this history:

He had evidently had some form of infantile paralysis, which I judge to have been infantile hemiplegia, resulting in athetoid paralysis of the right arm and hand and somewhat the same of the right leg, though not much, for he walks everywhere with a habit of turning his foot sidewise and stepping more on the fore part and outer side of his foot. His right arm had been so useless for years from constant and excessive athetoid movements with increasing neuralgia of the forearm that Dr. Charles Phelps, of New York, had some years before amputated the forearm. The pain, however, did not abate; another surgeon stretched his brachial plexus. The pain was not mitigated, and the incessant athetoid movements made it so unbearable that Dr. Weir amputated at the shoulder. The pain continued after this and seemed even worse.

He now came to me with a complaint of continued pain and movements. I found very bulbous nerve ends in the axilla, and dissected them out. No great improvement followed. Subjective pain continued,

and the scapula and shoulder stump were incessantly in spasm being drawn up high on the neck.

Dr. Græmme Hammond tried his hand at the patient with electrical and vesicating treatment. After one year of this, he referred him to me, with advice to stretch the cervical plexus. Instead of this, I did the intradural section of the posterior roots on June 4, 1894, at St. Luke's Hospital.

I exposed the cord beneath the arches of the fifth, sixth, seventh and eighth cervical and first dorsal vertebrae and made a full-length incision in the dura. After three ounces of cerebro-spinal fluid escaped I picked up the posterior roots and divided all that make the brachial plexus—the fifth, sixth, seventh and eighth cervical and first dorsal. From each of these I cut out a quarter of an inch piece.

On account of the unusual athetoid movements I thought it as well to divide the anterior or motor roots supplying the amputated arm. I picked up the anterior root of the seventh and eighth cervical and divided them, which made the stump jump sharply; then the first dorsal, which did not call out muscular response, and the sixth cervical, which did not, also. This led me to fear that what I took for the sixth might have been the fifth, and that if I cut one more above for the fifth I might get the fourth, which would take some supply from the phrenic and disable the patient. I desisted, therefore, from cutting the higher motor root, satisfied with having resected thoroughly the posterior roots of the fifth, sixth, seventh and eighth cervical and first dorsal and cut the anterior of the sixth, seventh and eighth cervical and first dorsal.

The patient made a good convalescence, with primary union and a solid scar.

For two days he had a suggestion of meningeal and spinal irritation, talking erratically and had stiff neck and weakness of the left hand (which I attributed partly to attitude in lying). He had slight rise of temperature to 101°, followed by a nervous hysterical state for three or four days—and then rapid convalescence. The shoulder stump was somewhat insensitive on the axillary part of the deltoid flap which afterward became natural.

For the first week the patient said he still had pain in the part; but when he was discharged, four weeks later, every evidence was against it. His condition was greatly improved. The stump, which before operation was thrown into athetoid spasms with every subjective and objective evidence of pain, could now be handled without any such spasms or pain. At one point on the axillary side of the chest flap in the old scar there remained one sensitive point, probably from a thoracic nerve, but it was of not any moment. The original shoulder pains, which had been present and not dependent on handling, had largely abated, though not entirely gone; and he had none of the constant athetoid spasm which constantly jerked the shoulder up onto the neck. He could, however, raise and lower the shoulder painlessly at will, and with one hand still resting on it drop it to a natural position—an action which had been impossible before operation. The operation may, therefore, be said to show a marked success in relieving athetoid spasms and pain.

The immediate result of section of the roots of the plexus as far as noting anesthesia and muscle paralysis is negative on account of the patient having previously had a shoulder amputation and lacking all the

parts supplied by these: but the resection of the roots at the highest possible point was done with a view to prevent the constant play of reflexes from the stump to the spine.

The subsequent history of the patient is this: He had been for so many years an inmate of hospitals that, after a few weeks unavailing search for work, he drifted into one of the large charity hospitals and occasionally returned to see me. He has never had recurrence of pain and spasm as before. His own statement and action were corroborative. There was in his mind, however, such a lingering memory of former pain that what remnant of the real thing remained was exaggerated to him and led him to submit to treatment in the hospital for some months longer.

When I last saw him, a year and a half after my operation, there was none of the former athetoid spasm of the shoulder nor the objective evidence of suffering such as had formerly been present—though he says he still has pain. His general health was excellent, and the scar solid and painless.

About the same date of my first operation Mr. Bennett, of St. George's Hospital, London, operated for relief of sciatic neuralgia (evidently ascending neuritis of the lower extremity), with the same idea in view.<sup>1</sup> His case is most corroborative. I give an epitome here.

CASE IV. The patient was a laborer, with acute persistent spasmodic pain of the left leg and recurring muscular spasms. His suffering was terrible; so that the family were obliged to move from their lodging on account of the crying out of the patient.

Amputation of the left leg at the knee. No improvement. Later, stretched the sciatic nerve. No improvement. Excised the sciatic nerve two inches. No result.

December 24, 1888. Incision in middle of back; divided lower four lumbar posterior roots, and one upper sacral.

Subsequently the temperature was 101° (next day). Pain shooting down both thighs, but disappeared when drainage-tube pressure was removed. Free leakage of cerebro-spinal fluid due to not suturing the dura. Pain entirely disappeared, but spasms of muscles occurred at intervals. The anesthesia of the thigh, as shown by diagrams, was absolute after the first day, for the cut nerve-roots. During the eight days following there was a progressive restoration of sensation of the anesthetic area.

The patient died suddenly of cerebral apoplexy, in the doctor's presence, on the twelfth day. The *post-mortem* verified this—as well as showing that no restoration of continuity of the nerve-roots divided had taken place.

Mr. Bennett says: "To whatever cause the return of function may be attributed, one very important contingency seems fairly certain in the case, namely, that, had the patient lived sufficiently long, the sensation over the whole of the affected part would have been regained; and, further, that no danger of a recurrence of the pain need have been apprehended with the return of sensation, seeing that the restoration was independent of union between the cut ends of the nerve-roots."

Victor Horsley contributes notes of two cases of spinal intradural resection of the posterior roots in a

tabulated list, but I can find no memorandum of the details.

(1) Localized spasms and pain in the right eighth and ninth dorsal posterior roots in a man aged thirty-three years. Exploration and division of these roots. Result: Primary union. Invasion of other roots.

(2) Localized severe pain, vaso-motor changes and wasting in distribution of roots from left half of lower third of cervical enlargement. Congenital origin. The patient was a boy of fifteen years. Exploration. Division of the left seventh and eighth cervical posterior roots. Result primary union. Escape of cerebro-spinal fluid for three weeks. Much relief.

McCosh did an intradural section of the posterior roots of the fifth and sixth dorsal for neuralgia, but had no anesthesia following. The patient survived, however, and died of tuberculosis a year or so later.

#### REVIEW OF CASES.

(1) Tilley. For nearly two years ascending neuritis, pain in the right arm, following violent work. Had had many operations, and finally amputation near the shoulder. Acquired morphine habit.

Final operation by me. Divided sixth and seventh cervical, both roots, outside the dura but inside the spinal canal; seventh and eighth cervical posterior roots inside dura.

No evidence of permanent relief after eight years. Temporary cutaneous anesthesia. Has slowly recovered, though not entirely.

(2) Zabinski. Man aged forty-five years. Exposure of arm to cold. Ascending neuritis in left arm. Many operations on nerves—resection and stretching—with no relief during two and one-half years. Agonizing pain, paroxysmal and constant. Morphine hypodermically every two hours.

At the operation the posterior roots were divided intradurally—sixth, seventh, eighth cervical and first dorsal. Immediate relief from pain. Some return of pain in second week. Entire stoppage of morphine.

Patient discharged in four weeks. Improved as to pain. Anesthesia up to middle of arm. Suffering comparatively insignificant. Six years later an inmate of an invalid home. Relatively slight evidences of pain. Many features of success from the operation.

(3) Hassett. Great improvement.

(4) Dr. Bennett. Sciatic neuralgia. May be classed as successful.

(5, 6) Horsley. Two cases. Insufficiently reported for criticism. One is recorded as having had much relief.

(7) Dr. McCosh. Of use only in showing the comparative innocence of the operative work.

In considering the effect on sensation, theoretical and practical, we have not only the foregoing cases but some more elaborate experimental work done by careful observers on monkeys and animals, which are of great value.

It had already been shown by Horsley and Gowers<sup>2</sup> that, to produce anesthesia of any area of the skin, division of three roots must be made.

Sherrington<sup>3</sup> has given us some very instructive animal demonstrations of the peripheral distribution of the fibres of the posterior roots of some of the spinal nerves. Frogs, cats and monkeys were his patients.

<sup>1</sup> Med. Chir. Trans., 1889, vol. lxxii, p. 21.

<sup>2</sup> Trans. Royal Society, London, 1894, vol. clxxxv, B, pp. 641, 763.

<sup>1</sup> Med. Chir. Trans., 1889, p. 529.

To determine and map out the areas of each dorsal root, he removed the brain of a frog and severed the spinal cord above, to eliminate cerebral reflexes; then, cutting all roots but one close to the cord, he tested the skin sensation by dilute acid and mapped out sensitive areas for each, which, of course, would be the anesthetic area if that one alone had been severed.

In monkeys he thus found that the zones of the posterior roots of dorsal nerves have a fairly regular course, extending from the median line behind to the median line in front, with a marked trend downward, the lower border more than the upper, so that the zones which were, roughly speaking, parallel lines, become broader as they pass forward.

These cutaneous zones do not correspond numerically with the course of the ribs, but are in general, much lower; for example, if the anesthesia begins at the level of the eleventh rib the lesion would be in the eighth or ninth root. The discrepancy becomes greater as we go farther down.

One important demonstration is that, while each spinal root contributes fibres to several peripheral sensory nerves, yet the territory covered by a single root is never a patchwork but a continuous area. Cutaneous territories of spinal nerves overlap each other to a great extent, so that most points on the skin receive their innervation from two or even three roots. Thus, for example, the nipple lies mainly in the territory of the fourth dorsal root but the third and fifth roots contribute fibres as well, and only after destruction of all these roots does the territory become anesthetic. Thus the whole of a posterior nerve-root may be destroyed and yet no distinct disturbance of sensation arise. On the other hand, if an area of absolute anesthesia is present, the highest root contributing to this area must be destroyed.

Later experiments by Sherrington and Mott<sup>4</sup> are even more interesting. Whole series of sensory roots supplying a monkey's limb was divided. For the arm it was from the fourth cervical to the fourth dorsal. For the leg, it was the second to the tenth posterior dorsal. As soon as the animal came out of narcosis a diminished use of the hand and foot was noticed. Grasping motions were entirely absent. The monkey would take no nourishment with the affected limbs, and would not carry them to the mouth even when the other limb was tied. For the course of more than three months it remained unchanged.

To determine what influence the stopping of movements by cutting the sensory roots might have on the irritability of the cortex, Mott and Sherrington stimulated the cortex by electricity. In the motions of the limbs no difference was to be seen between the operated and the intact side. This showed that there is a considerable difference between the more delicate voluntary motions and those called forth experimentally by cortical stimulation. In a voluntary movement, not only the cortex, but the whole sensory tract from periphery to cortex is active. Where only a single sensory nerve-root was cut, even the largest, no complete anesthesia was produced, and no difference resulted in the motion and use of the limb. When any two adjacent roots were cut and a zone of anesthesia resulted, but slight effects of motility were observed except when the *palm* was made anesthetic. When sensation was cut off from the whole hand or foot then the disturbance of motion was found just as great

as when all the sensory roots of the extremities had been cut. On the other hand, when all the posterior roots are cut except that which supplies the palm, to wit, the eighth cervical, the motility is almost completely retained. No trophic disturbances of the skin, were seen to follow section of the sensory roots. Wounds which were inflicted on the affected extremities healed perfectly well.

#### CASES OF ASCENDING NEURITIS TO WHICH SUCH OPERATIONS MIGHT APPLY.

It seems probable that the field of this operation may remain a small one, though important. How much it may be widened, time will show. There is a class of cases of acute neuritis starting in a peripheral nerve and ascending, classed as "neuritis migrans." Its gravity cannot be belittled. The sufferers from it express the agony they feel. It is horrible. Most of them ultimately resort to morphine. While minor degrees of multiple neuritis (alcoholic or toxic) are usually recovered from, the graver form is carried through life, and ends the usefulness of the patient.

Most surgeons have encountered these cases where nerve-stretching, resection and amputation have successively been done with no benefit.

It is not difficult for the neurologist to distinguish the real from the simulated or hysterical cases, by brief study and test of the electrical reactions.

The absence of faradic irritability characteristic of neuritis distinguishes the hysterical or simulated pain.

In illustration, I may mention the case of a lady whose hand was squeezed violently one night by her son. She thought nothing of it until next morning she was worried by a severe pain in it. She sent for a physician, who added to her alarm by exaggerating its importance and putting it up in snug bandages. The pain grew worse—at least in her mind—and he put it up in plaster-of-Paris. She felt her suffering worse in confinement, and he became so worried that he cut down upon and stretched the median nerve, with no relief. She was about to enter a hospital to have her hand amputated, when she consulted an eminent surgeon, who recognized her mental agony, and doubting a real neuritis, referred her to Dr. Dana. Dana found no electrical or other evidence of neuritis, nor of any defect except for operation. He told her she was not ill, and advised her to go home, take off her bandages, and have nothing done; and he has no reason to doubt she has recovered. The evidence of pain depends on individual resistance and the amount borne without showing it. One can usually tell how much distress really exists by watching keenly for a long period. The resort to morphine quickly reduces the resisting power, so that after an operation the absence of morphine and lessening of signs of pain are conclusive proof of great improvement.

Hemiplegics with late peripheral neuritis ought to be suitable cases for operation, other things being equal. If pain has not been coincident with the primary motor defect it is probable that the peripheral inflammation is secondary to unrecognized traumatism.

Prolonged and intractable neuralgia from zoster or allied troubles would offer a typically perfect opportunity to test the operation, and I have confidence in its value.

Pain from cicatricial pressure after cancer opera-

<sup>4</sup> Royal Society, March 7, 1895.

tion would, if it were grave enough to justify the operation, be amenable to relief.

As to the gravity of the operation and its technique, we may judge by a large accumulation of evidence. The two dangers are shock from hemorrhage, and sepsis. All cases of root section thus far reported have made excellent recoveries — proof that it adds nothing to the risk of laminectomy to open the dura.

Opening the dura always allows the escape of two or three ounces of cerebro-spinal fluid if the patient is strictly horizontal. The treatment of the dural incision should always be by continuous suture with fine catgut. There is no difficulty whatever in doing this with a small curved eye needle. Leakage of cerebro-spinal fluid afterward is practically nothing; whereas, if no sutures are applied, leakage continues for weeks.

The approach to the cord is best done by a quick and simple method which I have devised and practised in many cases. A long skin incision is made over the spine by a rather large knife, which by one or two rapid strokes separates the muscle from one side of all the spinous processes to be operated on and touches the laminæ at their bases. The knife handle is sufficient to scrape the muscle from the laminæ. With a bayonet-shaped cutting pliers the bases of the processes are cut through in rapid succession, and with a curved periosteum elevator the series of spinous processes, with uncut interspinous ligament and muscles attached on one side, are pressed *en masse* to that side. The hemorrhage is very slight and entirely controlled by pressure, with perhaps two or three clamps to be taken off in a few moments. A properly curved rongeur (such as shown) now begins the destruction of the laminæ. Beginning on the base of any process the dura is exposed at one point carefully, and then the rongeur proceeds up and down with rapidity.

Occasional points of venous bleeding may be met, but a narrow strip of iodoform gauze or MacEwen's sticky gauze pressed down upon them by some pointed instrument allows the work to go on rapidly. When the dura has been slit up as far as desired we can roll the cord from side to side without touching it, by lifting the cut edge of the dura. The roots must be picked up by a blunt hook and a quarter to a half inch cut out, without much handling for microscopic observation. A half-dozen small bottles should be provided, as in my second case, to identify the roots and learn of their inflammatory invasion.

The dura ought always to be sutured by fine catgut, and the outer soft parts fall together easily because there is no perceptible loss of substance. Drainage of the vertebral groove should be done for one day by a small tube not going far in. No plaster jacket or support is ever needed, as the strength of the spine is in no way impaired.

#### CONCLUSIONS.

A comparatively new and interesting field of work is opened by these few cases.

Thus far, even in weak patients, the operation has been devoid of risk.

It is sound in theory, and has yielded enough results to show that it may become a meritorious operation.

It should be resorted to early in cases of ascending neuritis which have heretofore been subjected to successive nerve-stretching and resection and finally amputation, uniformly without benefit.

The experimental and practical evidence shows that two additional roots higher up than the apparent origin of pain should be included.

There ought to be no risk in severing the posterior roots of the third and fourth cervical, as well as those to the brachial plexus, simply because they supply the phrenic, inasmuch as that needs motor supply only, and at best it has the opposite phrenic in reserve.

#### A METHOD FOR MORE FULLY DETERMINING THE OUTLINE OF THE HEART BY MEANS OF THE FLUORESCOPE TOGETHER WITH OTHER USES OF THIS INSTRUMENT IN MEDICINE.

BY FRANCIS H. WILLIAMS, M.D.

A SHORT account of some of my work on the applications of x-rays in medicine was read at the meeting of the Association of American Physicians held in April last and has been published in their "Transactions." I now wish to speak further of some of the uses of the fluoroscope in medicine, leaving a fuller discussion of them and of my observations relating to physiology and diagnosis, to a later time, when I shall hope also to describe the methods of examination that I have employed.

The picture which presents itself to the eye when the body is examined with the fluoroscope is full of interest. The trunk appears lighter above than below the diaphragm and the rise and fall of the muscle are distinctly seen; the chest is divided vertically by an ill-defined dark band which includes the backbone; and each side is crossed by the dark outline of the ribs, the spaces between which, are the brightest portion of the picture. One also sees the pulsating heart, especially the ventricles, and under favorable conditions the right auricle and left auricle, but it is difficult to separate the latter from the pulmonary artery; a small portion of one side of the arch of the aorta may be seen in the first intercostal space to the left of the sternum. The organs of the abdomen are much less readily observed, but the presence of a piece of lead or of substances impermeable to the Röntgen rays may be detected in them. The neck and face may be searched with the fluoroscope; and in the arms and legs the bones and certain foreign substances may be seen. The head is the least promising field.

In examining the heart by means of percussion, we can usually determine its left border, but we cannot find its lower border. Now let us see what can be done in this direction by means of the x-rays. The constant motion of the heart and diaphragm interfere with the use of radiography but renders fluoroscopy all the more valuable. The lungs and the organs adjacent to them are the parts of the body which best lend themselves to fluoroscopic examination, because of the great difference in density between the former and the latter, or, in other words, of permeability to the x-rays. The lungs being less dense than the neighboring organs allow the x-rays to pass through them more readily, and thus appear light against a darker background formed by the heart and parts of the liver and spleen, which, owing to their density, are less permeable by the rays and thus appear dark when seen through the fluoroscope, that is, there is contrast.

The heart lies in such a position, however, that ordinarily but a certain portion of its outline may be

seen with a fluoreoscope; a horizontal plane may be imagined through the body, when in a standing position, that would pass through the heart, liver and spleen, as these latter organs overlap the heart to some extent; but it is readily possible to isolate the heart, as it were, by the contraction of the diaphragm; the organs below the heart being then depressed, the overlapping is avoided and the heart being more closely surrounded by transparent lung tissue the whole of the apex and part of its lower border come into view and may be drawn on the skin. A suitable position of the Crookes tube of course facilitates this end somewhat. It is desirable to see as much as possible of the heart at one time in order to best estimate its condition — then if necessary we may study one or another portion separately — and by means of this fluoroscopic examination we can follow a larger portion of its outline and gain more information as to its size, position and action than has hitherto been within our reach. I may add here that I have made an instrument that enables me to listen to the heart-sounds while watching the pulsating organ.

The character of the revelations which are made to us by a fluoroscopic examination of the heart may be most briefly suggested by Figs. 1, 2, 3 and 4, taken from photographs of lines traced on the skin, which follow the outlines of the organs as seen through the fluoreoscope. The patients from whom these photographs were taken were lying on a canvas stretcher and the Crookes tube was placed under and about a foot below the trunk. These illustrations have been selected from a number of photographs I have thus far made.

**CASE I.** Fifty-seven years old. The Crookes tube was placed eighteen inches away from and under the point indicated by the black dot in Fig. 1. The heavy crossed lines indicate the sixth rib; the full lines what was seen in the fluoreoscope; the broken line the border of the heart obtained by percussion, which on the left side coincides with the line as seen in the fluoreoscope. The lower border of the heart cannot be got by percussion, and is seen in the fluoreoscope only during deep inspiration. No apex beat was felt. The full parallel lines on either side of the body mark the diaphragm in ordinary expiration and deep inspiration respectively.

**CASE II.** Twenty-seven years old. The full curved line on the left (see Fig. 2), as far as the dot which marks the apex beat, and the broken line inside, indicate both what was seen in the fluoreoscope and what was obtained by percussion — the full line during ordinary expiration, the broken line during deep inspiration. The continuation of the full curved line (beyond the broken line) that runs towards the sternum marks the lower border of the heart, which, as above stated, is obtained by the fluoreoscope, and this only during deep inspiration. The two parallel lines on the left mark the diaphragm — the upper in ordinary expiration, the lower in deep inspiration. The difference between these is greater than in Figs. 1 and 3.

**CASE III.** A boy, eleven years old. The lines in Fig. 3 indicate what was seen in the fluoreoscope. The full curved line on the left marks the border of the heart as seen during ordinary expiration; the broken line inside, during deep inspiration; the two parallel lines on either side, the diaphragm in ordinary expiration and deep inspiration; the black dot, the point the apex beat was felt.

**CASE IV.** Fifty-eight years old. Enlarged heart; examination with the fluoreoscope: the left and part of the lower border of heart are seen (Fig. 4), and the diaphragm lines already alluded to in the other cases. The difference between these last mentioned lines is less than usual.

These outlines of the heart are obtained with the fluoreoscope when the lungs are normal; when abnormal, on the contrary, as in tuberculosis, for instance, if the lungs are much involved, the outlines of the heart as well as those of the liver and spleen are obliterated as the lungs become impermeable to the x-rays, and therefore the outlines of these organs cannot be distinguished.

In another abnormal condition of the lungs, namely, emphysema, I have observed that the heart, liver and spleen are still more distinctly visible than when the lungs are normal. This is because in emphysema the volume of the lungs being increased, and yet retaining their transparency, the diaphragm is depressed and a part of the lungs intruding themselves between the sternum and heart, and their edges between the chest wall and the liver and spleen separate two dense tissues, thus rendering a larger portion of the outlines of the heart, liver and spleen visible in the fluoreoscope than when the lungs are normal. This condition of things assists in making a diagnosis of emphysema of the lungs. On the other hand, in this disease the outline of the heart is ill defined, or in some cases, impossible to define by percussion; therefore, the fluoreoscope in emphysema renders especial service.

The fluoreoscope also reveals the presence of certain aneurisms, as they are dense, if their outline encroaches upon the visible portion of the comparatively transparent lung tissue; likewise, in connection with other physical signs, the presence of fluid in the pleural and pericardial sacs, the presence of pneumonia, edema of the lungs, infarctions, tuberculosis, hydro-thorax, pneumo-thorax, etc. Further, it assists in diagnosis in excluding certain diseases by showing that the lungs are clear; this would be of importance in life insurance examinations.

I have examined about forty cases of tuberculosis, and find not only that the fluoreoscope is of value in determining the extent of the disease, but also sometimes reveals its location, where and when it would otherwise have been unsuspected.

In pleurisy with effusion the outline of the diaphragm is less defined or obliterated altogether according to the amount of fluid present, as are also some of the ribs in the upper portion of the affected side; the lung is also denser, being compressed by the fluid, if there is much effusion. I observed in one case that the line separating the fluid surrounding the lower part of the lung from the compressed upper portion ran from about the junction of the sixth rib with the sternum towards the outer end of the clavicle; this line as seen in the fluoreoscope corresponded with the one found by percussion.

All of the fluids withdrawn from the body which I have thus far examined with the fluoreoscope and by means of radiographs have rather less permeability to the rays than water. About an equal thickness of the heart, liver, spleen, kidney and muscle after death were about alike in permeability and were not much more of an obstacle to the rays than an equal bulk of water. Thus it is easy to understand why fluid in the pleural cavity dulls or obliterates the outline of the adjacent organs.

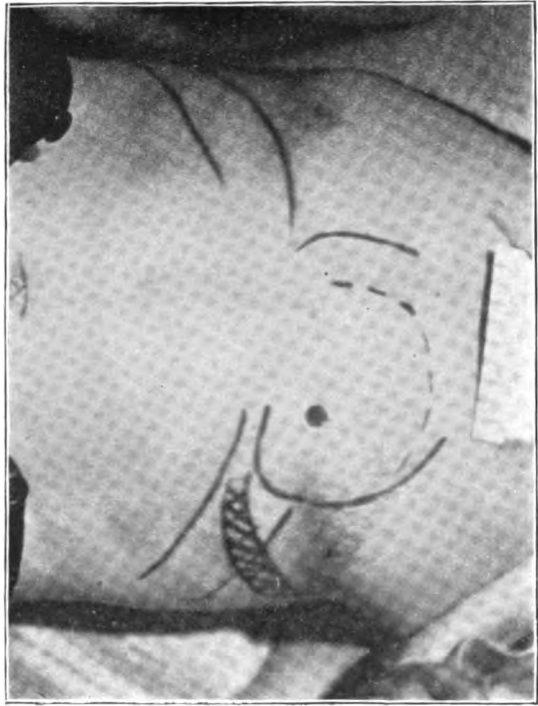


Fig. 1.

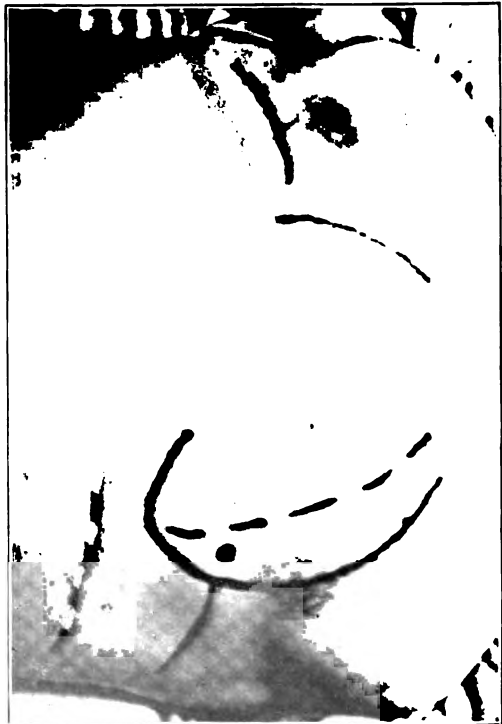


Fig. 2.



Fig. 3.

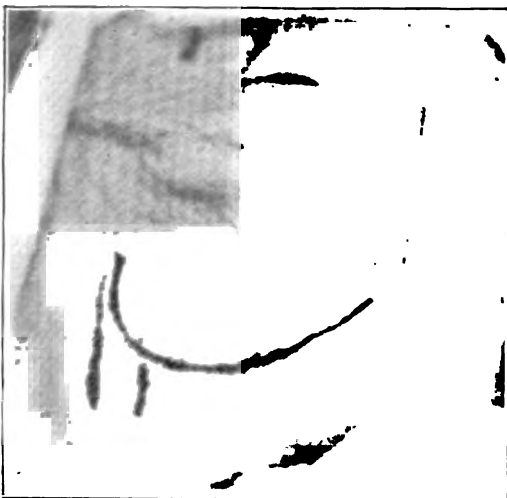


Fig. 4.





When the lungs become dense by disease they may obliterate not only the outlines of the ribs but also those of the liver, spleen and heart as I have already indicated. When there is not marked contrast between the intercostal spaces and the ribs or when the outlines of the clavicle and of adjacent organs are not defined it should always arouse suspicion of something abnormal in the lungs or pleura.

The application of x-rays to surgery has hitherto formed the prominent side of their usefulness; I have pursued my investigations believing that it would be possible to demonstrate their usefulness in medicine, as distinguished from surgery, and am now confident that the advances these x-rays render possible in medical diagnosis are great, and that they will prove a more valuable instrument in the hands of the physician than of the surgeon. I have found them especially useful in diseases of the heart and lungs. We may now look where we have previously only been able to listen, and sometimes to hear but imperfectly. The advance consists not alone in what we can now see that we could not see before, but also in that we can by hand and ear and eye together strengthen and confirm these separate observations beyond their respective limitations; singly they are beams, together an arch which justifies a heavier weight of inference.

Most of the work here described has been done in the x-ray room at the Boston City Hospital; the cordial interest of the Trustees and of my colleagues on duty have facilitated greatly the carrying out of these observations, and I shall always be indebted to Prof. Charles R. Cross of the Massachusetts Institute of Technology and to the assistants in his laboratory for the opportunity of studying the physics relating to the x-rays.

## Clinical Department.

### A CASE OF PROLONGED ANURIA AND A CASE OF COMPLETE REMOVAL OF CARCINOMA OF THE NECK.<sup>1</sup>

BY F. S. HARRINGTON, M.D.

#### PROLONGED ANURIA.

MAY 27th. S. Y., a female twenty-three years of age, was operated upon, and the right kidney removed in very advanced stage of tubercular disease.

MAY 28th. As the patient had passed no urine, the catheter was used and about one ounce of thick purulent fluid was drawn from the bladder. There was much vomiting during the day. The usual means were tried to stimulate the kidneys. Nitro-glycerine, hot poultices to the renal region, digitalis, etc., were used with no effect.

MAY 29th. An ounce of fluid pus was drawn by the catheter. Uremic symptoms.

MAY 30th. Pilocarpine and hot-air bath. Caused sweating. No urine.

MAY 31st. The symptoms were more uremic. There was much vomiting. Repeated large enemata of salt solution were given for several days.

JUNE 1st. Bowels were moved with calomel. The patient was decidedly uremic, stupid and vomiting. In the afternoon twelve ounces of blood were taken from the ulnar vein and replaced by a quart of salt

solution. This produced no apparent effect on the pulse, but the patient became brighter. No urine secreted.

JUNE 2d. The patient had held her own. The vomiting was less, and she retained some nourishment. Six ounces of blood were withdrawn, and replaced by two quarts of salt solution. One-half of the solution was Ringer's solution. After the infusion the pulse became stronger and slower. The patient appeared brighter and stronger.

JUNE 3d. Forced sweating was continued and purges were used.

JUNE 4th. The uremic symptoms were more marked.

JUNE 5th. Infusion of two quarts of Ringer's solution into saphenous vein. It made the pulse fuller and stronger. Sweating by hot air was continued.

JUNE 6th. Condition the same. Pustular eruption. Wound clean and nearly healed.

JUNE 7th. Infusion of Ringer's solution one quart.

JUNE 8th. Patient was weaker. No sweating could be produced with pilocarpine and hot air.

JUNE 9th. Took large amounts of water and considerable food. There were copious watery movements with blood from the bowels. No twitchings.

JUNE 10th. The patient was weaker, but still took food and liquids. No urine. In the evening labored respiration. Pulse failed steadily till death on June 11th at 12.05 A. M.

Autopsy revealed total absence of left kidney and ureter.

#### RINGER'S SOLUTION. :

Sol. sod. chloride (.6%)	1,000 c. c.
Sol. sod. chloride (1%)	10 c. c.
Pot. chloride (.75%)	10 c. c.

Sod. bicarb., 10 c. c. of 1.0 %, formerly used, omitted because it caused precipitation of calcium chloride on sterilizing.

#### EXCISION OF THE LEFT PNEUMOGASTRIC NERVE AND THE CAROTID ARTERY IN A CASE OF CANCER OF THE NECK.

F. S. D., male, twenty-five years of age, came to the hospital June 1, 1894. Fifteen months before he had noticed a white spot on his tongue. After four operations by Dr. Coolidge for the disease leucoplakia, there was no return in the tongue, although at the last operation, March, 1894, enlargement of submaxillary glands was noticed. At the time of entrance to the hospital they had attained considerable size. The submaxillary lymphatic glands on both sides were removed on June 2d. The patient made a rapid recovery and was discharged on the fifth day after the operation.

July 17th of the same year he was re-admitted to the hospital, and the deep lymphatic glands were dissected from about the vessels on the left side, exposing one and one-half inches of the common carotid. The dissection was carefully made and all suspicious tissue was removed. Discharged on the fourth day.

Notwithstanding this the patient returned on August 10th, showing disease along the anterior border of the sterno-mastoid well up toward the mastoid process extending deeply into the neck. The patient who had very remarkable healing power, was very anxious to have another attempt made to extirpate the disease. At his urgent request a seventh operation was undertaken. An incision was made extending from below the ear almost to the clavicle. After careful dissection it was found that the growth had involved the

<sup>1</sup> Read before the Surgical Section of the Suffolk District Medical Society, April 1, 1896.

carotid sheath and to such an extent that it was impossible to separate it from the vessels and from the pneumogastric nerve. The external, the internal carotid and the pneumogastric nerve were hopelessly involved in the cancerous mass. Half an inch below the fork of the common carotid a double ligature was passed and tied, including the artery, nerve and veins. The tissues were cut between. The patient's condition was good, and he showed no symptoms when the vagus was tied and cut. The mass, including the vessels and nerves, was dissected off to the base of the skull and then tied and cut. All suspicious tissue was removed, even parts of parotid behind ramus of jaw. There was not much bleeding. Patient came out of the ether well, though three or four hours later the respiration was somewhat irregular, and varied from four to ten to the minute. The patient passed a comfortable night. He was hoarse and unable to swallow. For three days he was fed with a stomach-tube. He had considerable cough, and raised much mucus. On the fourth day he was able to take liquids by mouth. The wound healed by first intention. He was discharged at the end of two weeks.

The disease began to reappear in less than a month. It perforated the larynx, allowing the escape of air. The patient died four months after the last operation.

It was formerly held that section of the pneumogastric nerve was a fatal accident. Roswell Park, in Volume XXII of the *Annals of Surgery*, has shown that this is not true. He found 15 cases of accidental injury; of these, 11 cases died. It is probable, however, that many of these died from the accompanying injuries. Of 50 cases of injury during operation 21 died, 27 recovered, and the result in the two remaining cases was not recorded. The number of cases in which excision of this extent is desirable is small. When malignant disease has invaded the vessels and nerves so completely, the hope of complete extirpation is very slight.

#### A USEFUL METHOD OF SUTURING THE FRAGMENTS OF FRACTURED PATELLA.<sup>1</sup>

BY FRANCIS S. WATSON, M.D., BOSTON.

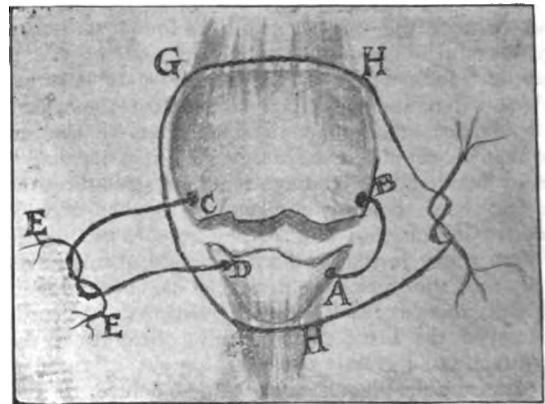
THE patient I show to-night sustained a simple fracture of the patella through direct violence in September, 1895, a little more than six months ago. There were the usual evidences of the injury—swelling, ecchymosis, etc. The leg was placed on a straight splint with the foot sharply flexed, and a firm compression was applied to the knee-joint for four days. The swelling had then subsided for the most part.

Operation, September, 1895.

The knee-joint was opened by a large semicircular incision, convex downward. All clots, fragments of bone and shreds of tissue were removed and the cavity of the joint thoroughly cleansed and washed out with sterilized water. The edges of the two fragments were then sawed off evenly, so as to fit each other. There was no comminution of the fragments, and with strong traction they could be approximated satisfactorily. The fragments were then brought together in the following manner, which so far as the writer knows is a new method. The novelty consists in passing the sutures transversely through the substance of each fragment and as far from their fractured edges

as the size of the smaller fragment will allow, instead of passing them vertically as is customary.

The results are so excellent in this and two other cases in which it was practised, in one by Dr. F. B. Lund and in the other by the writer, that it seems worth while to call attention to it. The object sought in this way of placing the sutures is to secure the longest possible bearing for them, and therefore the least liability of their tearing out through the bone. One long suture made up of three single silkworm-gut strands braided together (which material was suggested to the writer by Dr. Lund) was passed through the fragments, as shown in the cut. The ends *EE*, of the suture, were entered respectively in the openings



*A* and *B*, on the same side of each of the fragments of the patella, passed through the channels drilled in the bone, and brought out at the corresponding holes *C* and *D* on the opposite sides of the fragments; these ends were then tied tight, and the fragments were closely approximated in so doing. In order to ensure the result, a second or supporting suture was passed through the tendons close around the upper and lower ends of the two fragments, *GG*, *HH*, in the same way as the first suture was passed, except that the ends were brought out on the sides opposite that of the first one.

Convalescence was uninterrupted. Through a misunderstanding, the leg was kept confined by a splint much longer than was intended, so that the motion of the joint has only recently (at the end of five and a half months) become at all free. There is perfect union, no separation whatever of the fragments, and the motions of the joint, which are already nearly natural and without any pain, may be expected to become practically entirely normal in the course of another month or two. The silkworm-gut sutures can both be felt beneath the skin, but they cause the patient no inconvenience.

#### A CASE OF SECONDARY SUTURE OF THE PATELLA.<sup>1</sup>

BY F. B. LUND, M.D.

THE following case is of interest as showing the value of suture of the patella for marked disability caused by old fracture with wide separation of the fragments, and of certain simple expedients by which the separated fragments may be brought together

<sup>1</sup> Read before the Surgical Section of the Suffolk District Medical Society, April 1, 1896.

<sup>1</sup> Remarks made before the Surgical Section of the Suffolk District Medical Society, April 1, 1896.

without having recourse to section of the quadriceps muscle or chiselling off the tubercle of the tibia.

J. M., a married woman forty-three years of age, entered the Boston City Hospital in the service of Dr. F. S. Watson in August, 1896. Her story was that eight years before entrance she had fractured her right patella by a fall, striking the knee against a stair. She was treated by splints and plaster strapping at the Massachusetts General Hospital, where she lay in bed for nine weeks. After leaving the hospital she wore a splint for six months and was obliged to use crutches for some months after. She says that at the conclusion of this treatment there was a separation of the fragments of more than an inch.

Four years ago her knee again gave way as she was going down-stairs, causing her to fall heavily. She was again treated at the Massachusetts General Hospital, and was obliged to wear a plaster-of-Paris bandage for eight months and a splint for one month longer, using crutches all this time.

Eleven months ago her foot slipped, and her knee gave out again. She entered the Boston City Hospital, and remained nine weeks, and for the eleven months since leaving the hospital has had to wear a splint. Without the splint she was unable to keep her knee from sudden flexion, which causes her to fall. She was seriously hindered in the performance of her household duties by her disability.

Examination shows her to be a woman below the medium height and very stout. There is a transverse fracture of the right patella, the upper fragment being much larger than the lower, and a separation of two and a half inches. The upper fragment is firmly held by contraction of the quadriceps, and cannot be drawn down in the slightest degree. There is apparently a fibrous band uniting the two fragments.

In view of the serious disability entailed by her condition, which, as above stated, was such that without apparatus she was unable to walk without constant danger of falling, of the difficulty of applying effective and comfortable apparatus in so stout a patient, and of the fact that on two previous occasions the attempt to dispense with apparatus had resulted in more or less dangerous falls with increase of disability, it was thought best to attempt to restore in some degree the usefulness of the limb by opening the joint and suturing the fragments together.

At Dr. Watson's kind invitation I operated on August 29th, in the following manner: A semilunar incision with the convexity downward was made across the ligamentum patella, the ends of the incision extending a little above the level of the top of the upper fragment. The flap of skin and fat was turned up, exposing the fragments, which were connected by a fibrous band. This band and all tissue between the fragments was dissected out, and the edges of the bone freshened with the curette until the cancellous tissue was exposed. Then the fragments were freed of all adhesions, and an attempt made to draw the upper one down to the lower, the quadriceps tendon being freed from its adhesions to the bone for some three inches above the patella. Owing, however, to the long continued contraction and consequent atrophy, the quadriceps had lost its elasticity to such an extent that I was able to stretch it only a part of the necessary distance, the fragments still remaining about an inch apart, until by extending the thigh to an angle of forty-five degrees with the trunk, I found

that by the exercise of strong traction the fragments could be brought together.

On attempting to suture them together by sutures made of three strands of silkworm-gut twisted together and passed through vertical drill-holes in the bone, in the ordinary manner, it was found that when the required degree of traction was exercised the sutures cut through the somewhat spongy and softened bone. Dr. Watson's suggestion of passing the suture horizontally through the quadriceps tendon close to the upper border of the upper fragment around the patella, and through the ligamentum patellæ (as shown in his article published on page 338 of this issue of the JOURNAL) was then adopted, and in this manner it was found possible to strain the fragments together, and hold them firmly in place. After suture of the wound the usual dressings and splints were applied, and the patient was put to bed with the leg suspended at an angle of forty-five degrees. Healing took place by first intention.

The patient left the hospital in six weeks, wearing a splint which she wore for five months. Firm union of the patella took place, but on the removal of the splint she was found to be able to flex the leg only a few degrees. She has dispensed with the apparatus for four months at time of writing (June, 1896), and is able to walk well and do all her housework. She has gained about ten degrees of flexion. She is much pleased with the result of the operation, which has restored her a safe and useful, though not a perfect leg, which considering the difficulties presented by the case is all that could be reasonably expected.

In two cases which presented very similar difficulties to the one described, Dr. W. W. Keen<sup>2</sup> adopted the expedients of transverse division of the quadriceps tendon and chiselling off the tubercle of the tibia in order to bring the fragments together. In this case the simple flexion of the thigh on the trunk aided by Dr. Watson's suture, which admitted of being safely subjected to severe tension, accomplished the same result. These methods, it seems to me, will probably be successful in the majority of similar cases, since the case reported was not of the simplest type, and where practicable should, I think, be preferred to the methods adopted by Dr. Keen, as less radical and complicated, as well as less likely to result in weakness of the structures which constitute the front of the joint.

#### OBSTRUCTION OF THE BOWELS CAUSED BY GRAPE SKINS AND SEEDS.

BY J. B. THORNTON, M.D., BOSTON.

J. B., male, age twenty-five years, clerk.

General health good. Called at my office at 2 A. M. complaining of ineffective attempts to move bowels. Great pain, tenesmus, nausea. Bowels locked up for sixty hours. Had taken "pills" night before. Advised use of glycerine suppository, followed by copious enema. He used the same and returning at 6.30 A. M. reported no result. Pain extreme.

I placed the patient on the operating table, and by use of scoop and finger removed an amount of dry grape skins and seeds sufficient to fill an ordinary berry box. It is interesting to note how calmly the appendix allowed this mass to sail by its portal without interference.

<sup>2</sup> *Annals of Surgery*, 1896.

## New Instruments.

### THE CONTROL OF THE SPINE BY A NEW METHOD.

BY EDWARD A. TRACY, M.D., BOSTON, MASS.,  
Fellow of the Massachusetts Medical Society.

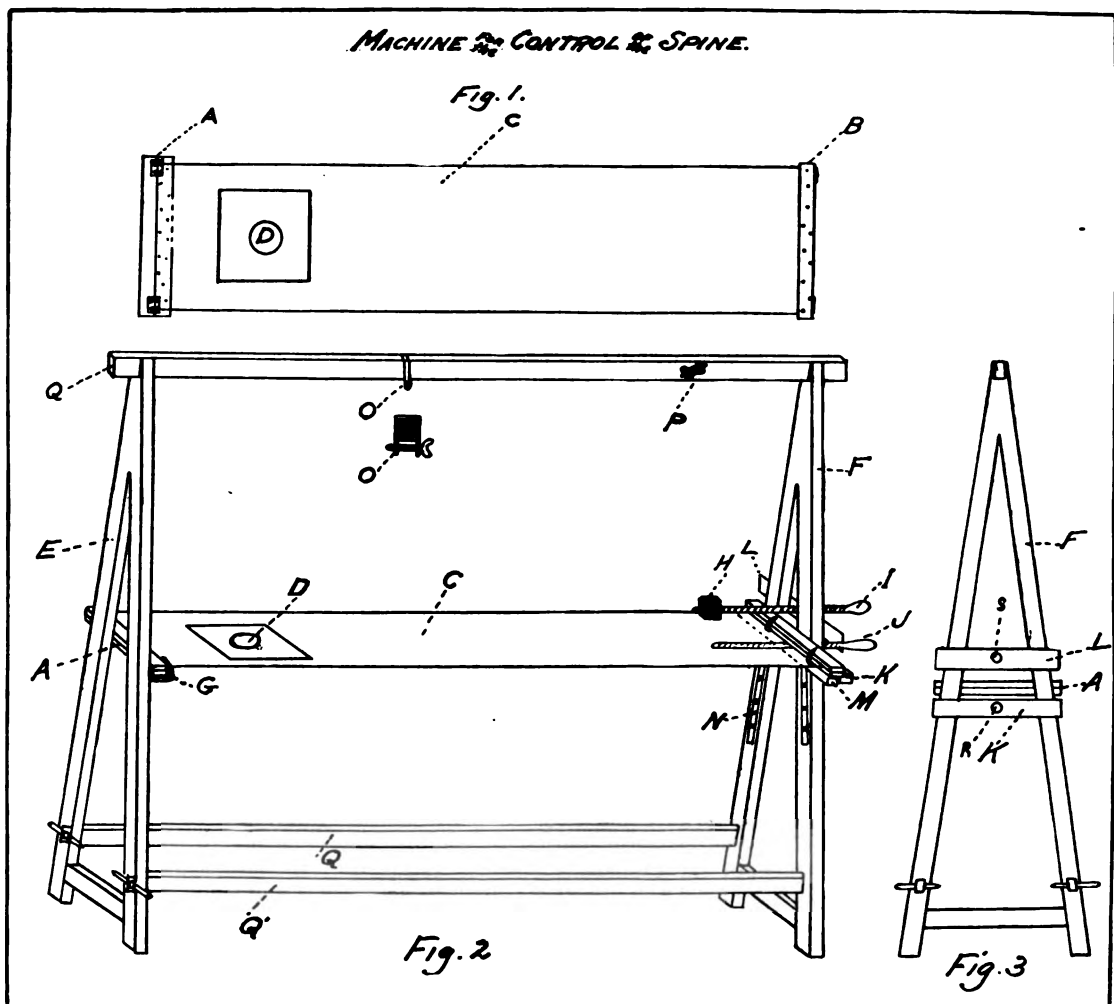
THE method devised by me for controlling the spine, and here described, has for its object the placing and holding of the spine in the position desired by the surgeon, with comfort to the patient.

The ordinary method of suspension, by which gravity is allowed to exert traction upon the spine has ever appeared alarming. I do not know that such suspension has ever resulted in accidental injury to the patient, but the operation is so analogous to hanging that many dread to use it lest the analogy might be carried *ad extrema*.

In my method the patient lies on his back upon a stretched piece of strong cotton cloth, supported on a frame (to be described shortly); a strap holds the head in position towards one end of the stretcher, and

traction upon the spine is gotten by means of a screw on the further end of the frame that pulls upon a band strapped just above the great trochanters. Besides this there is a band placed around the body over whichever vertebra that we wish to get lordosis, and to this band is attached a cord which drops from the horizontal bar placed over the stretcher; by pulling on this cord we can get any desired lordosis of the spine. The cord drops from a movable clamp on the bar, which allows it to fall over any desired portion of the spine, and is fastened by twisting it over a cleat on the bar, yachting fashion.

This method gives to the surgeon a superior control of the spine, inasmuch as he can regulate and if it need be measure the amount of traction used, and simultaneously get any required degree of lordosis. Besides giving the surgeon a better control of the spine, this method is used with comfort to the patient, manifested by my little patients remaining sometimes two hours in position on the frame without a murmur of complaint. Another advantage is, and this is of importance to the general practitioner, no assistant is re-



EXPLANATORY OF THE LETTERS ON PLATE.

FIG. 1. Cloth Stretcher for recumbent patient. A, Clamp open. B, Clamp closed. C, Cloth. D, Hole for occiput.  
FIG. 2. Machine, in projection. A, Clamp. C, Cloth stretcher. D, Hole for occiput. E, Left triangle. F, Right triangle. G, Hook holding clamp. H, Threaded block. I, Screw for traction upon the spine. J, Screw for traction upon the cloth stretcher. K, Cross-piece for J. L, Cross-piece for I. M, Wooden piece for hooks. N, Bracket. O, Movable clamp. P, Cleat. Q, Bar.  
FIG. 3. End view of right triangle. A, Clamp. L, Cross-piece for I. K, Cross-piece for J. R, Hole for screw J. S, Hole for screw I.

quired by him in manipulating his patient, or in applying a Sayre's jacket, or my wood-fibre jacket. In other words, the frame holds the patient in the intended position, and the surgeon has both his hands free to manipulate plaster-of-Paris, or my wood-fibre jacket material.

The frame which I shall now describe is easily and cheaply constructed. A carpenter can make it. The frame is composed of two triangular end pieces *E* and *F*, Figs. 2 and 3, and three horizontal bars, *Q Q Q*, Fig. 2. For making the triangles and the bars, lumber  $2\frac{1}{2}$  by  $1\frac{1}{2}$  inches was used. The bars are  $7\frac{1}{2}$  feet long; the triangles are 5 feet high, the feet of each triangle being  $18\frac{1}{2}$  inches apart. The triangles are so mortised for the fitting into them of the bars that the bars when in position hold the triangles apart no matter what the force may be that tends to pull them together. Wooden pins of a slightly conical form, hold firmly the triangles and the lower bars; the upper bar, fitting into the open mortises of the apices of the triangles has no need of pinning. This manner of mortising and pinning makes the frame portable, a matter of convenience when the patient is to be treated at his home.

The triangles support the stretcher upon which the patient lies. The stretcher consists of a piece of unbleached cotton cloth, yard-wide, doubled lengthwise. The cloth is held and stretched in this manner: A clamp catches the cloth at each end; one of these clamps is attached by means of hooks at the left triangular piece of the frame, while the other clamp rests on brackets attached to the right-hand triangle, and is acted upon by means of a large wooden screw that works from a cross-piece attached to the right-hand triangle. This screw acts upon a piece of wood to which are fastened the hooks that catch the clamp on the right-hand side of the machine.

Each clamp is constructed of two pieces of hard pine ( $\frac{3}{4}$  by  $2\frac{1}{2}$  by 18 inches), which are hinged, as shown in Fig. 1, *A. B.*; two rows of sharp-pointed steel nails  $1\frac{1}{2}$  inches long are driven through each piece, and holes are made, so that when the clamp is shut, the nails rest in holes upon the opposite piece; the cloth is fastened in the clamps by laying an end across the open clamp and shutting it so as to force the nails through the cloth. The clamps are then placed in the hooks arranged as described above. The angles of these hooks are such that the more traction is made on the cloth the tighter it is clamped, by pressure from the hooks. By this simple device a perfectly secure clamping of the stretched cloth is gotten.

Traction upon the spine of the recumbent patient is gotten by means of a screw that acts from the right-hand triangle upon a block (threaded to fit the screw); this block having attached to its sides straps connecting it with a band that clasps the patient just above the great trochanters. A hole in the stretcher (towards the left end) allows the occiput to sink in it, and a band, buckling over the forehead, holds the head in position. The cloth about this hole is reinforced by sewing it between two pieces of leather, square-shaped, with holes for the occiput.

By means of the screw, therefore, with the patient in the described position, traction, in any degree, can be gotten on the spine. Besides this traction upon the spine, I have found it advantageous to produce at the same time lordosis. This is provided for by a cord (not shown in the plate) which drops from the

movable clamp *O*, Fig. 2, and is attached to a band around the patient's body over that vertebra where we wish to produce lordosis.

The movable clamp is made from iron and is the only piece of the mechanism in this machine that must be made especially for it; the wooden screws, hooks, and cleat required being found already made at hardware stores. A blacksmith can make the clamp. It consists of a piece of one-inch strip iron, bent at right angles so as to fit over the wooden bar, and clamped by means of a thumb-screw and a threaded bolt. The cord for producing lordosis passes over this bolt when the clamp is in position. (If it be found to be inconvenient to have this piece made, a practical substitute is furnished by making a loop of strong cord, that can pass over the bar; if the upper surface of the bar be notched, this loop will remain in the notch in which it be placed, when the cord supporting the patient's body passes through it. Thus the loop can perform the function of the clamp.)

The wooden screws used in this machine are furnished by the large size wooden clamp known technically to hardware dealers as a pair of Bliss' hand-screws, No. 7, and sold by them. The hooks, ordinary meat hooks, and the cleat can likewise be bought at a hardware store.

From my work I feel justified in the following conclusion:

By means of the apparatus devised by the author a control of the spine, superior to that heretofore obtained, is furnished the surgeon, for the reasons that

- (1) Traction of the spine can be regulated by the surgeon.
- (2) Lordosis can be gotten at the same time.
- (3) The surgeon needs no assistant.
- (4) The patient is comfortable for he is not in an unnatural position.

## Reports of Societies.

### SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, April 1, 1896, DR. M. H. RICHARDSON in the chair.

DRS. FRANCIS S. WATSON, F. B. LUND, and J. W. ELLIOT exhibited patients.

#### ANATOMICAL SPECIMENS.

DR. WARREN: I brought a small tumor of the breast which I removed to-day, as it is somewhat out of the usual line, an excellent example of a certain type of breast tumor. This is a case of cystic adenoma of the breast, a very perfect type of that form of disease, sometimes known as villous papilloma, a benign growth which springs from the glandular structure of the breast. In a recent lecture I endeavored to show that certain types of tumor developed at certain periods in the life-history of the mammary gland, fibromas at the age of puberty when there is fibrous tissue developing in the breast; that the tumors containing gland-structure come later in life at the period of lactation and pregnancy. This is an adenomatous growth, but very much complicated by its surroundings, and consequently is found here growing in the interior of a cyst which I presume is a dilated duct of

the breast. This diagram gives an idea of the microscopic appearances. The papillary character is absent under the low power, showing these lobulated masses containing various little acini elongated and seen in long cross-section. They are really distorted acinous growths. Under higher power we get two or three layers of epithelium and the spaces you see are most irregular in character. In gross appearance they have a cauliflower-like growth growing into a cyst. This patient was about sixty years of age. This growth has been about three years in duration, and has one very characteristic symptom, and that is the occurrence of a sanious discharge from the nipple. A fluctuating tumor, isolated, discharging in a woman at that period of life is a cystic adenoma. The diagnosis was made in this case and confirmed by the examination after removal. This bottle contains the bloody fluid found in a cyst, which had emptied and refilled several times. I have here the specimen showing very well the growth, and a water-color sketch by Mr. Kaula showing the cauliflower-like appearances.

This is Dr. Richardson's tumor. It belongs to that class of gigantic growths of the breast of which we see comparatively few at the present time. We see them most in surgical treatises. It is a nodulated mass, unusual in size and when cut open consists of portions of this kind of glandular tissue. It contains also the other type of growth to which I alluded, that which we see earlier in the life history of the breast, the cystic fibroma. I do not think a microscopical examination of this has been made by Dr. Whitney, but in these large tumors we have composite structure and we may have in addition to the fibroma and adenoma a sarcomatous portion of the tumor so that we might call this a cystic fibroma or cystic fibro-adenoma or an adeno-fibro sarcoma. It will require a long name to describe just such a tumor as this, and you will see in the monographs quite elaborate designations. One curious feature is the presence of some large tuberculous glands. What they had to do with the tumor is not apparent.

DR. CONANT: It may be of interest to see one of similar type in the ovary. The interesting thing about it is that this woman was operated on in Buenos Ayers, four months ago, for an ovarian cyst presumably. When the doctor got in he found he had something which he thought to be malignant, and sewed up immediately, and told the husband that under no consideration must she be operated upon. He said it was adherent about nine inches to the bowel, adherent to the back and to the uterus, and that she would die in the operation. He said it was confined to one side. In the picture you see there are two tubes and two masses. When I opened it I thought it was malignant. It proved to be one of those things not adherent to anything, and the minute the hand was under it it rolled out. It made a very simple operation. I have seen quite a number of these cases, but I think I never saw one that showed so beautifully as that and was non-adherent.

DR. F. B. HARRINGTON read a paper describing

**A CASE OF PROLONGED ANURIA AND A CASE OF COMPLETE REMOVAL OF CARCINOMA OF THE NECK.<sup>1</sup>**

DR. M. H. RICHARDSON introduced Dr. Abbe of New York, as a gentleman with whom we all were

familiar from the brilliant work that he has done in various fields of surgery.

**DR. ROBERT ABBE, of New York, read a paper on INTRADURAL SECTION OF THE SPINAL NERVES FOR NEURALGIA.<sup>2</sup>**

DR. CHEEVER: I should like to say a few words, though I have no practical experience with this operation. One point I would like to mention before I forget it, is, that in this drainage of the spinal cord with a tube I am quite surprised to learn that continuous production and leaking of the cerebro-spinal fluid does not occur for a number of days. The only practical case that I can contribute to that point is this: Some years ago I had a lad who was shot through the spinal column and an opening made through the dura so that the cerebro-spinal fluid leaked out. The ball was extracted, some pieces of bone were taken away, and the wound was dressed as was customary in those times before antiseptics; and—I suppose, perhaps, in consequence of the want of antiseptics—the patient perished about the second or third day with an ascending meningitis which involved the brain. But the point I wished to speak of was the fact that during all this time there was a large flow of cerebro-spinal fluid which was so extreme that it wet through the sheets and kept up until he died. How far the inflammatory process developed may have contributed to this great flow of serum I do not know, and how far the present modes of antiseptics may, by preventing inflammation, allow temporary drainage followed by a check in the flow of fluid I am unable to say; but it seems to me an interesting point to consider.

Some years ago I had a little girl brought to me with a painful stump, following amputation of the arm after a railroad injury. The cicatrix was dissected out without avail. The axillary plexus of nerves were then dissected out, and much to our satisfaction at that time we found that they were the seat of a bunch of neuromata like a bunch of grapes, and we supposed that we were going to arrest the process. That proved not to be the case. After a little while she was brought back with a spasmodic affection of coraco-brachialis and latissimus and pectoral muscles which pulled the stump of the bone into the axilla and so to speak ground it in towards the chest and kept it drawn in constantly. This being supposed to be the final cause of the present pain, disarticulation of the shoulder-joint was done. The wound closed and healed, and relief followed for a little while; but within a few months pain recurred in the branches of the suprascapular nerve, the branch around the collar bone. The child went on and grew up, and the last I heard of her she had always been a sufferer from neuralgic pain.

I have never had the opportunity to practise these deep resections that are spoken of. Certainly, so far as we have gone, although they are very encouraging and very much to be desired, they have failed so far to produce an absolute cure. The operations which I have had the opportunity to do have been principally those for facial neuralgia, and the results have not been flattering. Meckel's ganglion I have removed twice, and the Gasserian ganglion once; and on some other occasions have gone so far as the foramina without attacking the ganglion inside. I have kept trace of these patients. I have two under observation still.

<sup>1</sup> See page 337 of the Journal.

<sup>2</sup> See page 329 of the Journal.



they both have a moderate degree of neuralgia, although nothing like the paroxysms of former times, but they are not absolutely free from pain. Trousseau, in his writings on neuralgia, which were very complete for those times, draws a very careful distinction in facial neuralgia between the simpler forms and those he terms epileptiform, in which the patient is affected by anything that affects the rest of the nervous system, as the sudden sight of an object, the opening of a door, the hearing of an unexpected and sudden sound will reawake the paroxysm of neuralgia. He, I think, draws a distinction that these indicate some central defect difficult to reach by operation and not so likely to be cured by operation as the other forms. It is very desirable that we should get at the centre of this pain. Whether, however, we can ever go far enough to unlock the chains of these diverse nervous connections without penetrating to the vital centre and destroying life itself is pretty hard to say. I think Mr. Horsley's experiments on the lower animals have given us more information than almost anything on this subject, and there is a field, I think, where experiments should be conducted largely. Any operation short of extinguishing life seems to me justifiable in patients who are suffering this daily and nightly torture. It is rather remarkable that in many of these cases we do not find now those cures which were formerly ascribed to operation. Trousseau says distinctly that enough opium given, and given long enough, will finally extinguish many forms of neuralgia, and he advises cultivating the opium habit and pursuing it much beyond the ordinary limits, and asserts a number of cures produced in that way. I believe that other forms of medication by the various anti-spasmodics, etc., have rarely succeeded. In milder forms of neuralgia long-continued medication with iodide and bromides, with the various forms of valerianate of zinc and iron and quinine we know will succeed to quite a remarkable degree. In the latter class of cases it always raises the suspicion that there may be something in the emotional or hysterical element which bears upon pain and is not distinctly due to inflammatory changes in the neurilemma itself. I have been very much instructed by the paper. I was much struck by the fact that we cannot say anatomically that we can cut off the sensibility of a given part by dividing the nerve which so far as we can see supplies it; but that the intercommunication or anastomosis of very distant branches may restore as in the case mentioned, sensibility to the part, after, apparently, all the immediate nerves that supplied it have been destroyed.

DR. J. J. PUTNAM: I am very glad to say a word or two about this matter, although it will only be practically for the sake of expressing my appreciation of Dr. Abbe's paper. I have been deeply interested in this subject ever since the first report of his operations was published, and I have a number of times since then recommended the operation, especially in the cases of cancer, involving the cervical or lumbar nerves, but it has not been carried out for one reason or another. The theory of the operation is certainly a very interesting one, and it is very much to be desired that we might have more microscopic work done in future cases, both as regards the nerves that are removed and also as regards the changes met with in the spinal cord and at the entrance of the posterior nerve-roots into the cord, in order to see exactly what

the nature of this process is, and whether after the spinal cord is reached anything corresponding to the inflammation which we might presume to be present in the lower part of the nerve is still present, or whether we have simply to do with degenerative changes. It would seem as if it might be very desirable to make a section in these cases absolutely as close to the spinal cord as possible, because it would seem as if what we must do is to get rid of all that tends to impair the circulation and cause pressure which keeps up the irritation within the nerve. I was very much struck some years ago, in making a study of nerves removed for trigeminal neuralgia, to see, in one case, in the thickened sheath close to a number of fibres which apparently had remained intact a large vessel with thickened walls which in its pulsations must have impinged directly on these nerve fibres. It would seem as if a portion of an inflamed nerve would be of little permanent value, provided any considerable part was left, higher up. In the spinal cord the local conditions are different, and some of the causes which *apparently* excite the pain of neuritis are absent. The spinal diseases themselves do not seem to be particularly painful, except locomotor ataxia and certain kindred affections. It is not strange that the pain should persist in a measure even after complete neurectomy, because the habit of pain becomes a tremendously strong and fixed one and has undoubtedly an anatomical correlative. There is another point of interest, namely, in regard to the number of nerve-roots to be divided. Even supposing we knew that the irritation existed in only one or two branches of these nerve-roots, it seems to me it would still be proper, if we could do so safely, to divide as large a number as possible, because the presence of even normal nerve-excitation in the neighborhood of districts which have been the seat of morbid excitations coming from diseased nerves would be likely to keep up the pain.

DR. C. B. PORTER: I have listened with a great deal of interest to Dr. Abbe's paper; and it seems to me there are one or two points in connection with it which will be of great practical value if it is proved, as it seems that it is by the few cases he has been able to report. If a cure is ensured for the neuralgia, it seems as though this is an operation that should precede the mutilating one of amputation in those cases which heretofore have been subjected to that operation. And then he has stated that where the sensation had been destroyed the monkey does not wish to use his motor power; possibly the human being who can reason will be able to use his motive power, and in that way, if the sensation is destroyed, it has saved to humanity the use of the limbs. I have had no personal experience, but I wish to express my appreciation to Dr. Abbe for what he has given us because it opens a field for the future which is very important.

DR. P. C. KNAPP: I feel very much indebted to Dr. Abbe for his paper. It seems to me that it is distinctly the most rational thing in the way of operation. As Dr. Abbe has said, these cases of severe ascending neuritis are fortunately rare, and it has not been my misfortune yet to have met with cases in the spinal nerves so severe as to demand such an operation. I think, as Dr. Porter has just said, that Dr. Abbe's operation should be performed first. My own experience of the neurectomies and nerve-stretching has convinced me that they seldom give any

permanent benefit. The modern theory of the neuron indicates that such an operation as this is the one to pursue. The severe trigeminal neuralgias of the so-called epileptiform type we know are due less to disease of the nerve-fibre itself than to the degeneration of the nerve-cell in the Gasserian ganglion. The anatomical relations are practically the same with the fifth nerve as with the ordinary spinal nerves. The cell itself is in the Gasserian ganglion or in the spinal ganglion; it lies outside the cord or pons, and sends its axis-cylinder process into it. The trouble in these neuralgias is apt to lie in the peripheral sensory neuron, in the cell itself, therefore the operation should be, not to cut off the peripheral portion of the cell, but to separate the cell here between the cord and the ganglion from the sensory centres. Now, in a certain number of the cases there may be degenerative disease of the central neuron so that the pain persists; but certainly in a very large number of these cases of intractable neuralgia the central neuron is intact. If an operation be done which cuts off the cell of the peripheral sensory neuron from the cord it is fair to suppose that we have no further trouble, and the Gasserian ganglion operations and these operations of Dr. Abbe's have shown us that the prospect of success although it is not always absolute is certainly very much greater than in operation outside the centre of disease. It seems to me that our knowledge of anatomy now shows us that the distal operations of the sensory nerve outside the ganglion are not rational and certainly clinical experience has shown that the neurectomies and nerve-stretchings are for the most part merely temporary things.

DR. G. L. WALTON: I have no practical contribution to offer to the discussion, but I am glad of the opportunity to express my appreciation of this valuable and instructive report from the pioneer of this branch of spinal surgery. It certainly does look as if we had here a last resort in cases of intractable neuralgia affecting the spinal nerves. It would seem to me that this operation should be resorted to with more readiness than that on the Gasserian ganglion for two reasons: in the first place, as Dr. Abbe has shown by these cases, the successive operations upon the peripheral nerves seem to either give no relief at all in these severe cases but rather tend to increase the pain, whereas successive operations on the fifth nerve do seem to give at least temporary immunity, sometimes two years or more; in the second place, the danger of these operations upon the nerve-roots as they emerge from the spinal cord is much less than that of those upon the Gasserian ganglion. There have been upwards of fifty cases of operation on the Gasserian ganglion, the mortality being about ten per cent., and not lessening, whereas in seven cases of operation upon the posterior roots there has been no mortality, and our daily experience of operations on the spinal cord goes to bear out this expectation. I have seen a number of operations on the spinal cord and I do not remember seeing a single case where the fatality seemed to have been due to the operation. As to the class of cases to be operated on. I was glad to hear Dr. Abbe speak of the intractable cases of herpes zoster. One of his cases has suggested the question to me, Why should not we resort to this operation in cases of painful stump after amputation? I have seen very few of these intractable cases of brachial neuralgia such as have been described, and

Dr. Abbe has said that they are few in number. If one should appear, however, I should not hesitate to advise this operation; certainly very much more readily than I should advise amputation.

DR. M. H. RICHARDSON: I have been very much interested indeed in the paper and in the subject of peripheral neuralgias generally. I shall feel very much encouraged if I see a case of intractable pain following amputation that does not succumb to neurectomies, to perform this operation. I have seen a number of operations on the cord for various causes and from the operation itself no mortality. I feel very much indebted to Dr. Abbe for his communication.

DR. ABBE: I have nothing to add. I have no doubt that something will come from the experimental work upon monkeys. As far as the operative work goes, it is a comparatively easy surgical procedure. Look out for hemorrhage; it is almost all venous and relieved by pressure almost all at once. There is very little bleeding after a few minutes. You do not have to chisel very much bone, do not weaken the spine at all. I have done quite a number of spinal operations first and last, and in this way opened the dura mater in the majority of them—perhaps ten out of twelve or fifteen—and have never seen any trouble in the way of septic infection. The dura never leaks after it is sewn up, and if it is not, it leaks and is serious. In Dr. Cheever's case there was a necessary leakage, just as in the case where the leakage existed twelve days until the man died, and in another case three weeks and then stopped. Where it is sewed by continuous fine catgut thread it is absolutely free from leakage, and the wound simply falls together again, no loss of structure and no trouble. A drainage-tube should be just inside the skin so as to drain the structures from the blood and have it as dry as possible. I think the idea of it being in some respects similar to the *tic douloureux* cases is reasonably exact. I have not had much chance to experiment on animals. Last week I dissected out the posterior roots of a couple of dogs, I dissected out too many, and the dogs succumbed in twenty-four hours, and one dog died from the morphine. The experiment can be done very easily on dogs. The posterior roots are easily picked up, quite large, and for the brachial plexus the seventh and eighth are almost as large as the human, while the fifth, sixth and first dorsal are smaller, but one divides them very easily. I am much obliged for your attention, gentlemen.

#### AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTY-SECOND ANNUAL MEETING, PHILADELPHIA, PA., JUNE 3, 4, 5, 1896.

THE President, DR. F. X. DERCUM, of Philadelphia, occupied the Chair.

#### FIRST DAY.

The PRESIDENT delivered an address entitled

#### THE FUNCTIONS OF THE NEURON.

He dwelt at great length upon the various views advanced by Nansen, and quoted several abstracts from this well-known author's work. Speaking of naked axis-cylinders, Dr. Dercum stated that they were in all likelihood a physiological impossibility in

the cerebrum, for were they numerous we can suppose nothing but a constant overflow of stimuli from one cell to another, and consequent incoördination, not only of thought but also of action. This is the view advanced by Nansen. The speaker stated that the question had arisen in his mind as to whether the neuron was not an absolutely fixed morphological element, and whether it did not possess a certain, though perhaps limited, power of movement. Continuing, he said, that realizing the practical value and the wide application of this idea, he had examined the literature to see whether a similar interpretation of nervous phenomena had occurred to others, and to gather such facts, if any could be brought forward in its support. He found that this thought had occurred independently to three observers, one in Germany and two in France. Ramon y Cajal, however, opposes the theory of the mobility of the neuron, and maintains, on the other hand, that the neuroglia cells possess a great deal of mobility. He points out, for instance, that the neuroglia cells of the cortex are at times stellate and at others much elongated. Their processes have numerous short arborescent and plumed collaterals. Two phases can be observed in them; first, a state of contraction, in which the cell body becomes augmented while the processes become shortened and the secondary branches disappear; and, secondly, a state of relaxation, during which the processes of the neuroglia cells are again elongated. Ramon y Cajal further maintains that the processes of the neuroglia cells in reality represent an insulating or non-conducting material, and that during the period of relaxation they penetrate between the arborizations of the nerve cells and their protoplasmic processes, and render difficult or impossible the passage of nerve currents. On the other hand, when the processes of neuroglia cells are retracted, the various nerve-cell processes which they formerly separated from each other are now permitted to come into contact. To me it seems as though Ramon y Cajal admits the very thing against which he contends.

Turning our attention for the moment to the subject of hysteria, we will see what a flood of light may be cast upon this hitherto so obscure and mysterious subject. Take the simple example of an hysterical paralysis, and see how easily it may be explained. The neurons of a certain area of the cortex, for instance, retract the terminal branches of the neuraxon to such an extent that the latter are no longer in contact, or sufficiently near to the neurons in the spinal cord which supply the muscles of the paralyzed parts. When power is suddenly reestablished in hysterically palsied limbs, it simply means that the terminal branches of the cortical neuraxon, previously contracted, are again extended so as to reestablish the proper relations with the spinal neurons. It would be interesting to follow out the ideas here brought forward in their application to the various phenomena presented by hysteria.

Turning to hypnotism, we can see what a ready explanation it affords for the phenomena presented; and, leaving this field entirely, we can see what an enormous value this interpretation of cortical action is for normal mental phenomena, taking, for example, the familiar instance of sleep. Numerous other ideas also suggest themselves in relation with the view here advanced, but time will not permit of my further discussing it.

#### ACUTE NON-SUPPURATIVE HEMORRHAGIC ENCEPHALITIS.

DR. J. J. PUTNAM, of Boston, read a paper with this title. He first sketched the literature of the disease, which has been mainly contributed by the German writers, the latest of whom is Oppenheim, of Berlin. The principal symptom groups are: (1) that described by Wernicke, as due to hemorrhagic softening mainly confined to the neighborhood of the third ventricle; (2) that described by Strümpell and others as attending more diffuse lesions of the hemispheres; (3) that it is possible that the hemiplegia of children may be due to a similar lesion involving the cortex, as Strümpell formerly suggested, and certain acute spinal lesions may belong in a similar category. Oppenheim has reported a number of cases, showing that however grave the symptoms of this disease may be, the outcome may be favorable.

The reader's case was that of a young boy who was attacked suddenly, two weeks after having been ill with the mumps, with paralysis of motion of both eyes and lids, deafness, coma, impairment of swallowing, right hemiparesis and double optic neuritis. At the end of three months, however, he had recovered, except for slight double vision and slight impairment of hearing and eyesight, and except that ever since the illness he had been subject to epileptiform attacks of short duration. These attacks are gradually becoming less frequent.

Reference was also made to another case reported by the reader in 1892, where, besides other serious cerebral symptoms, including double optic neuritis, temporary loss of hearing had also occurred. The cases reported by Oppenheim were given in outline, and the interesting fact noted that his patients, like the one here referred to, were mainly children. An analysis of these reported cases was also presented.

DR. L. C. GRAY, of New York, asked if any of these cases had retraction of the neck.

DR. PUTNAM answered that he was not certain as to its presence in his own cases, but it was present in the other reported cases.

DR. GRAY thought that the best macroscopical description of hemorrhagic encephalitis had been given by Elam some years ago. All cases seen by him (Gray) had proved fatal. In many instances the diagnosis was attended with extreme difficulty. He had generally been willing to diagnose these cases as meningitis.

DR. JOSEPH COLLINS, of New York, had observed a case of hemorrhagic encephalitis with autopsy, which corresponded with the description given by Oppenheim. He read the report of the autopsy, which showed old leptomeningitis, hemorrhagic encephalitis and a pachymeningitis hemorrhagica. There was no case on record in which these three conditions have been found associated.

DR. B. SACHS, of New York, said that the recognition of this form of cerebral disease showed a distinct advance in neurology. He had observed four cases. Two recovered and two died. In one case there was some doubt as to whether it was meningitis or not, as there was slight retraction of the neck, but no positive coma. He looked upon it as a milder disease than basilar meningitis. In one of the patients who recovered, the cerebral symptoms appeared simultaneously with the fever. The former lasted four days, leaving

the patient with slight ptosis and paresis of the external rectus.

DR. GRAY asked if fatal cases have shown more violent symptoms than those that recovered.

DR. PUTNAM replied that some of the more violent cases recovered. In general, the rapid development of severe coma is considered an unfavorable sign. It is frequently quite difficult to distinguish this condition from meningitis. He believed that the severity of the symptoms depends on the amount of poison absorbed into the circulation. We do not yet know the exact significance of retraction of the neck, which is a very unreliable diagnostic sign. In one of his own cases of influenza with symptoms of encephalitis, occurring in an elderly person, the brain was found only edematous. Sometimes changes are unrecognizable with the naked eye.

#### CEREBRAL COMPLICATIONS OF RAYNAUD'S DISEASE.

This was the title of a paper by DR. WM. OSLER, of Baltimore.

After referring to the frequency with which Raynaud's disease is met with in forms of insanity, he said that in a few cases cerebral manifestations due apparently to vascular changes, similar to those which develop in the peripheral parts, had been described. In the case of a man in his wards, already reported in 1891 by Dr. H. M. Thomas, epileptic attacks occurred in the winter months only, in connection with local asphyxia and superficial necrosis of the ears. The patient had also hemoglobinuria. In another case (a woman, aged fifty-two), during a period of six years, local syncope and asphyxia occurred at intervals in the fingers and hand of the right side, sometimes with aphasia, and on several occasions with transient paralysis of the right arm and leg. In the final attack the patient died with gangrene of the right hand and arm. The case of Weiss is believed to be the only other instance in which aphasia complicated the disease. In a third patient "falling attacks" of an indefinite character occurred in a young girl with local asphyxia of the legs between the knee and ankles.

DR. RIGGS asked Dr. Osler how often he had seen death follow this disease.

DR. OSLER answered that it was rarely fatal. This was the second fatal case with which he was familiar. The literature, however, indicates a number of fatal cases. He considered the complications as having no direct relation with the disease. The associated conditions were rarely serious.

#### THE DEVELOPMENT OF CRETINISM AT VARIOUS AGES.

This was a series of photographs presented by DR. PUTNAM, showing the appearance of a patient at various periods ranging from infancy to puberty.

#### TUMOR OF THALAMUS.

DR. WALTER CHANNING, of Boston, read a paper with this title.

The patient was an unmarried female of good heredity, and by occupation a school-teacher. She was of an active, nervous temperament, and the subject of hay fever and asthma until the spring of 1895, when she was under the care of a so-called "hay-fever specialist," and escaped the usual attack. Before admission to the hospital, November 29, 1895, she had been for some weeks mildly exhilarated, and extravagant in her ideas, but not enough so to inter-

fere with her work until the 22d. The only physical symptoms she had complained of were headache and insomnia. Her disease was diagnosed by an alienist of experience as mild acute mania when she came to the hospital. Since her death her friends have stated that she had weakness of the left arm before leaving them, but nothing was said of this when she entered. She was mildly exhilarated, with expansive delusions and hallucinations of taste and smell. She was unable to stand because of weakness in the left leg, and her left arm was weaker than the right, there being no power to move it above the elbow. Headache, not severe or localized, existed. There was little nausea. The pupils were equal in size and reacted to light. The eyes did not follow the finger. There was no ophthalmoscopic examination. The weakness in the left side was not so marked at the beginning as to attract special attention. It was later that its significance became apparent. Patella reflex slightly exaggerated and alike on both sides; plantar reflex moderate. The urine was of normal color; reaction acid; specific gravity 1.022. Urea normal; uric acid in excess. Blood counts—red 4,804,000, whites 12,400. The mild maniacal excitement continued for the first week after admission. The patient was very restless in the bed, moving her head from side to side and throwing her right arm over her head. She also often folded her arms rigidly across the chest, and clenched the fingers. After the first week she slowly sank into a state of stupor from which it was difficult to rouse her. The physical symptoms of central disturbance became rapidly more marked. There was entire loss of motion in the left arm and left leg, and later in the right leg, and extreme extension of both legs. The jaw became relaxed, interfering with respiration. The tongue fell back in the mouth. Breathing became jerky and irregular toward the end, and finally, the relaxed jaw could not be replaced and death ensued.

The autopsy was made by Dr. E. Wyllis Taylor, of Boston, who found a boggy, cyst-like-looking mass, extending back an inch behind the posterior border of the optic thalamus and forward to the junction of the caudate nucleus with the thalamus, the mass apparently involving the latter in its entire extent. Microscopical examination proved the tumor to be a vascular glioma.

The mental symptoms in this case seem to have been quite unlike those of the usual cases of brain tumor recorded, in which are found depression, dulness, irritability, stupor and even pronounced dementia. Several interesting questions arise, as for instance: Which symptoms probably presented themselves first, the mental or physical? Why should there be so much mental disturbance in such a case? Was the mental trouble an accident, and independent of the tumor? If not, how can it be satisfactorily explained? What diagnostic value do mental symptoms possess in cases of brain tumor?

DR. WHARTON SINKLER, of Philadelphia, thought that the appearance of mental symptoms in thalamus tumors was of much clinical interest. In his experience, somnolence and mental symptoms were of frequent occurrence.

(To be continued.)

In Stanford, Ky., doctor's bills must hereafter be paid every thirty days, in cash or negotiable notes.

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### HOSPITALS FOR CHRONIC AND INCURABLE CASES.

THE establishment of hospitals for patients suffering from long-continued diseases, or those of a fatally progressive character, is one of the many ways in which the modern philanthropic spirit is showing itself. It is only within a few years that that most unfortunate class in the community — those rendered unfit for the ordinary work of life by chronic disease — have been able to find a shelter during their declining years of uselessness. From a purely humanitarian point of view we must regard the foundation of institutions for the unfortunate poor, as one of the most far-reaching and significant lines along which charitable effort has worked.

In the first place our State institutions, of which Tewksbury is a shining example in Massachusetts, have for years been holding out to the indigent poor a comfortable refuge, when the strain of life has become too great for them to bear. By degrees, hospitals in connection with such institutions have been developed, until now an almshouse without a properly equipped hospital is rapidly becoming a thing of the past.

Not only, however, in the general lines of medicine has the spirit of care for the chronically afflicted shown itself, but also, and this is a matter still more worthy of consideration, in the establishment of institutions for the sole treatment of those suffering from some special form of disease. Hospitals for cancer, tuberculosis, epilepsy, are being established; and more slowly but unquestionably with certainty, will syphilis come to be recognized as an affection which demands special treatment in institutions devoted to its study.

The reason for this movement in America is sufficiently self-evident. Unquestionably the first duty of a municipal hospital — or of any hospital for that matter — is to receive into its wards those who through accident or disease are acutely ill. Whatever else is done in the way of relief of the sick, these sufferers must be given special privileges. They represent the emergency element in medical or surgical practice,

and as such must have the immediate attention which an emergency invariably demands. As a consequence we find in many of our hospitals that patients with chronic diseases are either not admitted to the wards at all, or are received tentatively, usually for short periods of time. Often lack of space or financial considerations necessitate such a policy; nevertheless, the great bulk of disease is chronic, and it is these chronic conditions which should peculiarly attract our attention as scientific physicians. Hence the perfectly natural tendency toward the establishment of hospitals for the incurable or slowly curable cases, which are usually refused admittance to our best municipal institutions. It is a natural and inevitable development.

An analysis of the conditions is not difficult. It is apparent that the matter of absorbing interest for the past decade has been acute disease in its relation to bacterial causes. It is equally self-evident that work along this line is still in its infancy, but sufficient has already been done to demonstrate to the most sceptical that much more will be done, and that many diseases which now fill our hospital wards will gradually but surely decrease in frequency. Epidemics are rapidly ceasing to exist. Under proper sanitary conditions, scourges like cholera and yellow fever are being robbed absolutely of their terrors, and we certainly do not take too optimistic a view when we say that typhoid fever and pneumonia may soon follow in the wake of pyemia and septicemia, and become rarities both in private and hospital practice. In short, with the growth of prophylaxis, in the attainment of which scientific medicine finds its richest field of usefulness, may we not confidentially look forward to the time when acute disease may in great measure come to be an accident of life and not one of its inevitable necessities?

Should this come to pass — and it requires no very acute observation to see that it is already in part with us — our next absorbing interest must be a closer study of the far subtler problem of chronic disease, its causes, and then its possible prevention. Such study and the scientific investigations which must accompany it can only be carried out in properly equipped hospitals, where patients suffering from chronic disease may be observed with the same care that is everywhere as a matter of course now being devoted to the acutely ill. It is time to enter a vigorous protest against the attitude of very many physicians, who are inclined to speak of the "old chronic" in terms almost of disparagement, and as an object unworthy of their serious consideration. Particularly is this frame of mind observable in the men about to begin their professional work, to whom the excitement attendant upon the treatment of a critical case forms the romance of medicine. Unquestionably this spirit should be discouraged; especially should the well-equipped men, about to take up their work, be brought to a complete realization of the fact that medicine includes the whole range of abnormal conditions, and that each and every

such condition is worthy of and demands the same devoted effort in the search for its cause. Happily this truer scientific spirit is showing itself in many quarters, and we may already see glimmerings of a clearer conception than has hitherto prevailed of the duty of the broad-minded physician.

As already intimated, the clearest evidence of this change of attitude is shown in the foundation of hospitals whose chief work is the investigation of one or several forms of so-called hopeless disease — hopeless, evidently, simply because we do not yet know a means of their prevention. It has been a great gratification to see as a healthy sign of progress, the growing feeling in the community at large and also in physicians as representative of the community, that not only a worthy charitable work, but also a prolific field for scientific investigation lies in these hospitals. Until physicians, supported by the communities in which they lived, came to recognize that just here was a source of usefulness hitherto untried, it was quite hopeless to expect that chronic disease, as such, should receive the attention which is unquestionably its just due.

Still, in spite of much improved sentiment, there is yet a lack of enthusiasm which is to be much regretted. We too often hear it said that chronic disease is uninteresting, as if anything about which we have real knowledge could be uninteresting, and more often still the dreary remark, that such patients must inevitably die and we can, in any case, do nothing for them; as if this were not all the more reason for making an earnest attempt. Not many years ago we spoke of tuberculosis of the lungs as incurable, and yet how different is our attitude regarding it to-day, thanks to vigorous work and study!

In our opinion not only should chronic hospitals be established, but they should be made places of study as never before, appointments in them should be, and no doubt will be, sought with an eagerness which hitherto has only been manifested at those institutions where the acutely ill have received treatment. It should be a source of much satisfaction that through the efforts of Boston's Institutions Department, the Long Island Hospital in Boston Harbor has finally emerged from its comparative obscurity as an almshouse into a hospital, whose function will unquestionably be a furtherance of the aims of scientific medicine. The significance of this change is, no doubt, insufficiently realized; it is as yet scarcely more than an experiment, but still an experiment which the whole tendency of modern medicine makes definite in its outcome. The city needs more than it yet recognizes, a hospital in which its chronic sick may be studied with the same thoroughness and conscientiousness that are now bestowed solely upon its acutely ill. It is an invaluable supplement to our city institutions, in that their overflow may find there a hospital in which the patients may look for the same care which they have already had. We fail utterly to see any reason why an unfortunate person who may be ill ten years should

have any less scrupulous care than one who is fortunate enough to anticipate a discharge at the end of three months.

It is the design of the Long Island Hospital, as now constituted, to provide medical attendance for its patients, which in the conscientiousness and scientific spirit in which it is performed may not fall short of that in any hospital for the more acutely sick. To effectually bring this about, those entrusted with the medical attendance of the hospital need the coöperation of the profession at large. With such coöperation, there can be no doubt that both from a humanitarian and a scientific point of view — and the two aims are really one — this hospital may be made to fill a real want in the community, and particularly with that portion of it which is interested in the advancement of scientific medicine.

#### MEDICAL NOTES.

**THE PLAGUE AT HONG KONG.** — The epidemic of plague at Hong Kong is said to be at an end. An occasional sporadic case is all that is left.

**DIVULGING THE PLAINTIFF.** — An esteemed and wide-awake Western contemporary has learned recently that a verdict of \$60,000 was given against an English physician for divulging the plaintiff professionally. Also that the case has been appealed.

**A LABORATORY FOR THE STUDY OF DIPHTHERIA.** — A special laboratory for the study of diphtheria under the direction of Professor Flügge has been opened in connection with the laboratory of hygiene in the University of Breslau.

**INSTRUCTION IN MEDICAL ELECTRICITY.** — The Electrical Standardizing, Testing and Training Institution of London, has made arrangements to give instruction in medical electricity, including applications of the Röntgen rays to surgery.

**BERI-BERI AT DUBLIN.** — Another outbreak of beri-beri has occurred at the Richmond Lunatic Asylum, Dublin. During the past two weeks about twenty inmates have been attacked, and they are now under treatment in isolated buildings. The type of the disease is so far very mild.

**THE WILHELM MEYER MEMORIAL.** — The contributions for the erection of the memorial to Dr. Wilhelm Meyer, the discoverer of the treatment of adenoid vegetations of the pharynx, have reached five thousand dollars. This is all that will be required for the completion of the monument, which is to be designed by a Danish sculptor.

**PASTEUR INSTITUTE, INDIA.** — The arrangements preliminary to the founding of a Pasteur Institute for India were discussed at a recent meeting in Simla, when Surgeon-Major-General Gore, Principal Medical Officer of her Majesty's Forces, the Quartermaster-General, the Surgeon-General with the Government of India, and Professor Haffkine were present. It is

proposed that the Institute should be erected in Kasauli or Darjeeling, and be a general institute, and not one for antirabic work only.

**PHENOMENAL PHYSICAL ENDURANCE.** — The campaign of the Democratic Presidential Candidate, Mr. Bryan, is of interest to physicians, as showing the number of speeches per day it is possible for a physically sound candidate to make without succumbing to exhaustion, and to laryngologists in particular on account of the hitherto unrevealed capacity for wear and tear shown by the human larynx. Certain unkind political opponents have suggested that by November Mr. Bryan will have been reduced to such a condition of exhaustion that absolute rest and a long course of the gold cure will offer him his only hope of recovery. However this may be, he certainly offers a remarkable illustration of physical endurance.

#### BOSTON AND NEW ENGLAND.

**THE BABIES' SUMMER HOSPITAL.** — The Summer Hospital for Babies, which has been conducted by the Public Institutions' Department at Rainsford Island, Boston Harbor, has just been closed for the season. The summer's work is reported to have been very successful, and it is proposed to still further increase the facilities for next year's work by the establishment of a booth for the accommodation of mothers whose babies are too ill or too young to be left.

**THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.** — The Sixth Annual Meeting of this Association was held in Allston Hall, Boston, September 29th, 30th, and October 1st, Dr. Robert Newman, the President of the Association, presiding. About forty members were present from all parts of the country. An extensive display of electrical apparatus was exhibited, and addresses were made by the President, and Dr. H. O. Marcy, of Boston. Lectures were given by Prof. William L. Puffer, of the Institute of Technology, on "The Electrical Principles Generally Used in Medical Treatment," and by Prof. A. E. Dolbear, of Tufts College, on "The Relation of Physics to Physiology." Reports of committees upon induction coils, alternators, and other allied subjects, and the election of new and honorary members, and the examination of apparatus filled the remaining time of the meeting.

**A FATAL ACCIDENT DUE TO CARELESS SPLICING OF ELECTRIC LIGHT WIRES.** — The wire commissioner of Boston has reported that the death of Thomas Hughes, of Somerville, the delegate to the Music Hall convention who was killed while climbing down the fire-escape of that building last Saturday morning, was due to careless splicing of a wire owned by the Boston Electric Light Company. A screw coupling was used of such construction that the brass screw-heads, worked through the insulation, at the very point where Delegate Hughes grasped the wire. Commissioner Flood is also of the opinion that the wire should not have been run so near the fire-escape

which in the light of the event is would seem to be obvious. The chief error, however, is that of allowing wires to be used before they have been inspected by the commissioner, the force at his control being too small to allow of his inspecting the wires as fast as they are put up by the electric light companies.

**DIPHTHERIA IN SALEM.** — There are about thirty cases of diphtheria in Salem, Mass., at present; the disease, however, is reported to be of a mild type. On account of the occurrence of a case in St. Joseph's Parochial School, that school has been closed for the present by the Board of Health.

#### NEW YORK.

**TWO NEW HOSPITALS FOR BROOKLYN.** — The establishment of two new hospitals is in contemplation in Brooklyn. The first is to be erected and managed by the Williamsburg Masonic Board of Relief, and about twenty Lodges are interested in the institution, which is not intended in any way to conflict with the Masonic Asylum in Utica. The second is designed for the benefit of Swedes, and has been incorporated under the name of the Swedish Hospital Association of Brooklyn.

**DEATH OF A PATIENT REPORTED AS CURED OF TETANUS.** — In the case of recovery from tetanus under the use of tetanus antitoxin at the Fordham Hospital, reported in the *JOURNAL* of September 10th, the patient unfortunately had a relapse which proved fatal. In the original attack the antitoxin had an immediate and most marked effect upon the disease, and there had been no convulsive symptoms for more than a week at the time the relapse occurred. The antitoxin injections were then resumed, and were given at eight-hour, instead of twelve-hour, intervals, but the vital powers of the patient, who was in a very low condition when first admitted, had been so seriously impaired, that he soon sank from exhaustion. This is said to have been the first instance in which the tetanus antitoxin prepared under the auspices of the Health Department had been employed.

**BAD SANITATION IN HAVANA.** — Professor Estevan A. Fuertes, of Cornell University, who some time ago was employed by the Brazilian Government to devise plans for the sanitation of the infected part of Santos, is in correspondence with the representatives of the Spanish Government in Cuba in reference to plans for improving the sanitary condition of Havana. The death-rate among Spanish soldiers stationed there from yellow fever and small-pox is said to be exceedingly high, and the Government feels the necessity of taking active measures to bring about a better condition of affairs.

**PROF. HENRI MOISSON.** — Among the passengers who arrived from Europe on the steamer *La Gascogne*, September 20th, was Prof. Henri Moisson, of the French Institute, and President of the French Chemical Society. Professor Moisson visits this country as the representative of the University of



Paris, where he is Professor of Chemistry, to attend the sesqui-centennial of the University of Princeton, and on his arrival he was welcomed by Professor Humphreys as the official representative of the latter institution.

### Miscellany.

#### THE FUNCTION OF THE HAIR IN MAN.

EXNER has published, in a recent number of the *Wiener Klinische Wochenschrift*, an article on this interesting subject. He states at the outset that the disposition of the hair on the different parts of the body always serves a definite object. The study of the descent of man and of embryology has shown that our ancestors were entirely covered with hair, as are the anthropoid apes. According to Darwin the gradual disappearance of the hair is due to the repulsion felt by women for hairy men, and their liking for the opposite, that is, to sexual selection. In the same manner he explains the exaggerated development of the hairy scalp in women, and of the beard in men, for in women the long hair and in men the beard have always been considered as attributes of beauty.

As to the physiological functions of hairs, it is admitted that they are modified sense organs, which have lost all connection with the nerves. It is probable that in primitive man the distribution of the hair upon the body was irregular, and that the length, color, structure and thickness of the hair varied with functions for which it was intended. The hair which has been left upon the body in the process of evolution, has been left there for a definite purpose. Certain hairs serve as organs of touch, notably the eyelashes, the bulbs of which are surrounded by a net-work of nerve fibres, and in a less degree the hairs of the eyebrows. Both these serve to protect the eyes; for being sensitive, they give warning of danger, so that reflex closure of the lids is produced. The eyebrows also prevent drops of sweat from running into the eyes, while the eyelashes keep out dust. The eyebrows and lashes also serve a purpose in sexual selection. The down which covers the body is also endowed with tactile sense; the hair in the region of the genitals and anus being the least sensitive. A thick growth of hair is also found in those parts of the body where friction must take place between contiguous cutaneous surfaces as in the axillæ, groin, perineo-scrotal and perineo-vulvar regions. By experiment with pieces of skin covered with hair, Exner has shown that the hairy covering markedly diminishes the friction of the cutaneous surfaces.

In animals the hair serves to maintain and regulate the heat of the body, but in man the hair of the scalp alone serves this purpose. Hair is itself a poor conductor of heat, and retains air, also a poor conductor, in its interstices.

Owing to sexual selection the hair in man has disappeared from the greater part of the body, and in obedience to the same law has been preserved in others (scalp and beard). The fact that the forehead is not covered with hair, Exner explains on the theory that in the contest between the natural tendency of the hair to protect the head against changes of tem-

perature, and the tendency of human nature toward beauty, the latter has prevailed more easily because the non-conducting properties of that portion of the skull are increased by the air-containing frontal sinuses, and that that portion of the head is easily protected from the heat of the sun by inclining the head forward.

### Correspondence.

#### "PRACTICAL HINTS FOR VACCINATORS."

BOSTON, September 26, 1896.

MR. EDITOR:—Thomas Whiteside Hime has lately published some "Practical Hints for Vaccinators," in the *British Medical Journal*. These seem to me well worthy of preservation. During the last eleven years, I have vaccinated nearly 40,000 people of all ages, and had, unconsciously, formulated almost the same set of rules. May I ask you to reproduce them with some comments born of my own experience.

1. Satisfy yourself the child is in thoroughly good health; always examine the body and buttocks before vaccinating.

This is a thoroughly good rule, not often enough observed. If, for instance, the child were the subject of a congenital syphilis, it would be important for the vaccinator to know the fact so that a later manifestation might not be credited to his operation.

I have always made it a rule not to vaccinate an infant during the dentition period, unless there were some special reason for the operation. An eruption of several teeth might take place coincidently with the height of the vaccinal fever, and a very serious illness might be considered as entirely due to the vaccination.

2. Vaccinate only with lancets kept for that special purpose. Disinfect them thoroughly before and after use.

I should rather say, do not vaccinate with lancets at all. Like my predecessors in public vaccinal work in Boston, I went through the whole series of instruments, from that dirty abomination, the five-pronged scarifier to the one-pronged one, and from that to the blunt venesection lancet. I found, finally, as no doubt almost every physician has in the last few years, that the ivory point answered every purpose. With the ivory point, you are not only able to use a fresh instrument with each operation, but you are able to scrape the epidermis instead of cutting deeply into subcutaneous tissues. I have always felt that resulting sloughs were often due to deep and extensive primary wounds.

3. Disinfect the arm before vaccinating.

4. Use soft tissue paper, which may be kept cut in packets of a suitable size, for washing and drying the arm, lancets, etc. Such paper napkins cannot be used more than once; whereas people become so attached to bits of rag that they are loth to part with them. The packets should be sterilized by baking from time to time, and be kept in a well-closed vessel.

These two rules need no comment. They are well worthy of remembrance.

5. Use blunt lancets rather than very sharp ones.

Use no lancets at all when the ordinary ivory point can be procured, and never use a sharp instrument of any kind.

6. Have the child's arm completely uncovered.

I would say that it is better to have the whole upper part of the body uncovered. We have not only the constriction of the arm above the site of operation to consider, but also the facility with which the operator may work. This facility may easily mean smaller resulting scars. With no clothes to hamper, the physician is able to push

the left hand firmly into the axilla (palm outward), and to grasp the upper arm so as to allow the minimum of motion. He will thus be able to hold complete control over the site of the operation, and need not be disconcerted or hindered by any twisting or squirming on the part of the infant.


7. The surface tissue must be removed so as to enable the vaccine virus to be deposited there; it is useless and disadvantageous to go deeper. By making a deep wound some of the vaccine is deposited where it will not infect (in the deeper layers), and some is swept away by the hemorrhage which is needlessly caused.

8. It is disadvantageous and unnecessary to cause blood to flow.

These two rules have been partially considered above. Besides the reasons given by Hime, we should consider the one which I have mentioned; namely, fear of sloughs.

9. As animal vaccine is so thick and tenacious, it will not penetrate readily into such minute scratches as suffice for the thinner and more watery human vaccine, therefore a slightly larger raw surface is necessary.

It is hardly necessary for us to consider the matter of human vaccine, since animal virus is so readily attainable. If the operator wet his ivory point, then scrapes the arm gently with the moistened edge, he will find that very small wounds will take up the virus. As the scraping goes on, the virus over the whole point will gradually dissolve. A slight rubbing with the flat surfaces of the ivory will readily transfer the virus to the arm.

10. The best method is to rub off the surface of the skin by frequently passing the edge of the lancet rapidly over it. The spot should be about this size . Do not make clean cuts or incisions.

We have already considered this, except as to the size of the spot. Most operators will find it difficult to make it as small as Hime suggests, without digging in. Make your wound, however, as small as possible.

11. Allow a few minutes for absorption, before the child is dressed.

A sensible and obvious recommendation.

12. Instruct the mother carefully to avoid irritating the pock, breaking it, poulticing, applying wet cloths, etc., and as to keeping the pocks scrupulously clean.

13. As the scab is a natural protector for the raw surface below, the mother should be instructed to take every care to avoid knocking it off.

14. Avoid shields. The dry clean scab is the best protector.

Instructions to the mother are very important. I think the mistake generally made by parents, is that of applying poultices. When the arm is swollen, reddened and tender, some kind neighbor suggests a poultice. The result is, that the scab (the natural protector) is dissolved off, and an open wound ensues. Such a wound is frequently hard to heal, and generally leaves an unsightly scar.

15. Do not be too economical in the quantity of vaccine used.

16. Make at least four insertions well apart.

One point will generally suffice for a complete vaccination.

As for the number of insertions, four would seem to be sufficient. I think that all vaccinators agree with the theory first propounded by Marson, that the amount of protection depends upon the number rather than the size of the vesicles. Four small insertions will not cause as much trouble, either at the time of operation, or afterwards, as one large one, while the amount of protection will be considerably greater. Besides, with four insertions, we are almost sure of having some successful ones.

Hime says nothing about the point of election. I would, therefore, formulate one more rule.

17. Choose the left arm, preferably, for your operation, and make your insertions between the insertion of the deltoid and the point of the shoulder.

By following this, you will have a good surface to work upon, you will place the resulting scars in an inconspicuous place, and, most important of all, you will escape the lymphatics, thus minimizing the chances of axillary abscess.

These rules well observed, would cause fewer and less serious complications in vaccination, and a greater amount of protection afterward. It would be well, also, for every student to familiarize himself with the appearance of the vaccinated arm, from the sixth to the tenth day, and to scrutinize carefully the external changes which occur in the umbilicated vesicle during that period. He would then be little likely, in after years, to accept a mere septic irritation for a successful vaccination.

Yours respectfully,

WILLIAM G. MACDONALD, M.D.,  
Physician to Boston Board of Health.

## BOGUS TESTIMONIALS: A DISCLAIMER.

THE PAVEMENT,  
NOTTINGHAM, September 18, 1896.

MR. EDITOR:—May I ask you to insert in your valuable paper the enclosed letter which I have sent to the *British Medical Journal*? In the interests of the medical profession and public alike, it is necessary that the methods of some advertising chemists should be exposed.

NOTTINGHAM, September 3d.

SIR:—I have just received a book of advertisements of an American nostrum called Sanmetto. To my astonishment, I find my own name appended to a most objectionable testimonial in favor of this drug. I have never used it, and need hardly say that I have never given any testimonial for it. I ask you kindly to publish this disclaimer at once, and to give your advice as to the legal remedy against this abominable proceeding.

I am, etc.,

W. B. RANSOM.

This very glaring invasion of professional and personal liberty is now under the consideration of the Medical Defence Union.

Probably the pamphlet has been sent out broad-cast in America as in England.

Yours faithfully,  
W. B. RANSOM, M.D., M.R.C.P.

## THE TRAINED NURSE.

BOSTON, September 24, 1896.

MR. EDITOR:—After hearing that Mrs. Astor gave five thousand dollars to a training-school for nurses on condition that she should never have one of them, I have felt that perhaps I was not wrong in finding great lacks in experiences with three in my own family. They were highly recommended, and in many respects most satisfactory. They were "above their business" when it came to the menial requirements of a room. In a private house it is even more difficult than in a hospital to introduce an uneducated servant to the room of a very seriously ill person, and it seems as if the modern nurse needed more and more to be waited upon. Among my friends I have heard dire complaints of her arrogance. She resents the desire of the family of the sick person to have communication with the attending physician except through her. When advised to rest by a care-taking hostess, she prances off to more lectures, and comes home in a nervous state unfit even to take care of herself, and still more opinionated than before in the acquisition of more knowledge. What is to be the outcome?

Sincerely yours,

A DOWN-TRODDEN FRIEND OF THE PATIENT.

## METEOROLOGICAL RECORD

For the week ending September 19th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. e		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.		8.00 P. M.
S...13	30.26	60	66	55	95	100	98	N.E.	N.E.	18	12	O.	R.	.36
M...14	30.12	58	60	55	95	93	94	N.E.	S.E.	6	6	O.	O.	.01
T...15	29.92	66	75	58	91	85	88	W.	Calm	7	0	O.	O.	
W...16	29.96	58	62	55	69	89	79	N.E.	E.	10	8	F.	C.	
T...17	29.80	62	69	55	88	90	89	S.E.	S.E.	8	12	O.	C.	.01
F...18	29.93	66	73	60	50	58	54	N.W.	S.W.	15	4	C.	F.	.02
S...19	29.70	67	77	57	93	100	96	E.	W.	12	8	O.	R.	.84
														1.27

\* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threat-  
ening; N., snow. † Indicates trace of rainfall. ☉ Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 19, 1896.

Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	732	328	18.34	13.16	10.08	1.40	3.50	
Chicago	1,678,967	313	136	30.45	10.73	16.24	6.96	4.64	
Philadelphia	1,164,000	427	159	16.33	8.28	7.32	2.30	5.06	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	491,206	197	78	20.40	12.75	9.18	5.10	3.57	
Baltimore	496,315	—	—	—	—	—	—	—	
Cincinnati	336,000	86	28	4.64	12.76	1.16	—	2.32	
Cleveland	314,537	82	31	3.66	6.10	—	3.66	—	
Washington	275,500	100	36	17.00	17.00	6.00	6.00	2.00	
Pittsburg	238,617	68	31	17.64	5.88	8.82	4.41	2.91	
Milwaukee	275,000	—	—	—	—	—	—	—	
Nashville	87,764	29	9	24.15	27.0	13.80	—	3.45	
Charleston	65,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	98,687	31	14	25.84	9.69	6.69	3.23	9.69	
Fall River	88,000	42	28	35.70	2.38	28.56	2.38	—	
Lowell	64,359	35	19	25.74	8.58	17.16	5.72	2.86	
Cambridge	61,519	23	11	30.45	8.70	17.40	4.35	4.35	
Lynn	62,335	22	7	32.20	4.15	16.60	12.45	4.15	
New Bedford	55,254	—	—	—	—	—	—	—	
Springfield	51,534	—	—	—	—	—	—	—	
Lawrence	52,153	24	17	20.80	4.16	16.66	8.33	—	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	11	4	27.27	18.18	9.09	—	18.18	
Brookton	33,157	10	4	20.00	—	20.00	—	—	
Haverhill	30,185	—	—	—	—	—	—	—	
Malden	29,709	15	—	39.99	6.66	20.00	6.66	—	
Chelsea	31,295	12	0	8.33	—	8.33	—	—	
Fitchburg	26,394	4	0	—	—	—	—	—	
Newton	27,422	8	3	12.50	—	—	—	12.50	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	6	1	16.66	—	—	16.66	—	
Waltham	20,877	7	5	14.28	14.28	14.28	—	—	
Quincy	20,712	5	2	—	—	—	—	—	
Pittsfield	20,447	3	0	—	—	—	—	—	
Everett	18,578	4	0	25.00	—	25.00	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,354	3	1	66.66	—	66.66	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 2,378: under five years of age 961; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 465, consumption 257, diarrheal diseases 241, acute lung diseases 218, diphtheria and croup 86, typhoid fever 79, whooping-cough 32, cerebro-spinal meningitis 11, scarlet fever and erysipelas 5 each, malarial fever 4, measles 2.

From whooping-cough New York 11, Chicago 8, Philadelphia 5, Boston 3, Washington 2, Pittsburgh, Cambridge and Melrose 1 each. From cerebro-spinal meningitis New York 5, Malden 2, Philadelphia, Nashville, Worcester and Fall River 1 each. From scarlet fever New York 3, Chicago and Boston 1 each. From erysipelas New York, Philadelphia, Boston, Washington and Fall River 1 each. From malarial fever New York 3, Nashville 1. From measles New York and Cincinnati 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending September 12th, the death-rate was 15.8. Deaths reported, 3,257; diarrhea 193, diphtheria 82, whooping-cough 76, fever 53, measles 44, scarlet fever 39.

The death-rates ranged from 8.7 in Derby to 23.1 in Liverpool: Birmingham 18.9, Bradford 14.6, Cardiff 12.5, Gateshead 14.8, Hull 17.0, Leeds 14.4, Leicester 11.8, London 14.8, Manchester 19.4, Nottingham 16.8, Plymouth 18.9, Salford 17.6, Sheffield 14.9, West Ham 16.4.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 19, 1896, TO SEPTEMBER 25, 1896.

A board of officers is appointed to meet at the Headquarters, Department of the Missouri, Chicago, Ill., on Monday, October 5, 1896, at 10 o'clock A. M., for the examination of such officers of the medical department as may be ordered before it, to determine their fitness for promotion. Detail for the Board: LIEUT.-COL. ALBERT HARTSUFF, deputy surgeon-general. MAJOR HENRY LIPPINCOTT, surgeon. CAPTAIN NORTON STRONG, assistant surgeon.

The following named officers will report in person to the president of the examining board appointed to meet at Chicago, Ill., on Monday, October 5, 1896, for examination for promotion: FIRST-LIEUT. HENRY C. FISHER, assistant surgeon. FIRST-LIEUT. HENRY A. SHAW, assistant surgeon. FIRST-LIEUT. CHARLES F. KIEFFER, assistant surgeon.

MAJOR JOHN V. LAUDERDALE, surgeon, will, upon the arrival of MAJOR EGON A. KOERFER, surgeon, at Fort Crook, Neb., repair to his home and await retirement.

MAJOR JAMES P. KIMBALL, surgeon, is relieved from duty at Fort Wingate, N. M., and ordered to Fort Columbus, N. Y., for duty, relieving MAJOR JOHN VAN R. HOFF, surgeon.

MAJOR HOFF, on being thus relieved, is ordered to Vancouver Barracks, Wash., for duty, relieving CAPTAIN RUDOLPH G. EBERT, assistant surgeon.

CAPTAIN EBERT, on being thus relieved, is ordered to Philadelphia, Penn., for duty as attending surgeon and examiner of recruits, relieving CAPTAIN WILLIAM W. GRAY, assistant surgeon.

CAPTAIN GRAY, on being thus relieved, is ordered to Fort Apache, Ariz., for duty, relieving FIRST-LIEUT. IRVING W. RAND, assistant surgeon.

FIRST-LIEUT. RAND, on being thus relieved, is ordered to Fort Clark, Tex., for duty.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 26, 1896.

G. A. LUNG, passed assistant surgeon, detached from the "Vermont," and ordered to the Naval Hospital, Chelsea, Mass.

H. D. WILSON, passed assistant surgeon, detached from the Chelsea, Mass., Hospital and ordered to the "Bache."

G. H. BARBER, passed assistant surgeon, ordered to the Naval Academy.

M. K. JOHNSON, assistant surgeon, detached from the "Bache" and ordered to the "New York."

F. C. COOK, assistant surgeon, ordered to the "Vermont."

## RECENT DEATHS.

PROF. GEORGE H. MARKOE, founder of the Massachusetts College of Pharmacy, and for many years identified with all its interests, died recently in this city.

DR. JAMES H. LEAVITT, one of the oldest dentists in Massachusetts, died in Pittsfield, September 28th. He was eighty years old and had been in continuous practice for sixty one years.

SIR JOHN ERIC ERICHSEN, professor of surgery in University College, London, died July 25d, aged seventy-eight.

PROFESSOR PAJOT, the distinguished French obstetrician, died recently in Paris. He was born in Paris in 1816. He studied medicine with the Paris Faculty, graduating in 1842. He became professor of obstetrics in 1863. In 1886, having reached the limit of age, he retired with the title of honorary professor. He was the author of several books and numerous papers on obstetrical and gynecological subjects. He was the founder and director of the *Annales de Gynécologie*, and the founder and first president of the Société d'Obstétrique et de Gynécologie de Paris. Pajot was a man of great acuteness and originality of mind, and as a practical obstetrician he was almost without a rival in France.

## Original Articles.

THE DIAGNOSIS OF SMALL OVARIAN TUMORS.<sup>1</sup>

BY F. H. DAVENPORT, M.D.

OF late years the refinements of diagnosis of pelvic disease have grown in importance and interest. Take, for example, pelvic tumors. Twenty years ago there was very little thought or said about them in the sense in which they are spoken of to-day—that is, tumors situated wholly or largely within the pelvis proper. Such tumors were hardly recognized, or, if detected on examination were quietly ignored until they became abdominal tumors. The growths with which the gynecologist of that time occupied himself were pelvic only as regards their origin. The methods of examination used for their detection and differential diagnosis were almost wholly abdominal—palpation, percussion, mensuration and tapping. Supposing an intra-pelvic mass were detected, it was either, as it was then termed, pelvic cellulitis, in which case it was coaxed to disappear with hot douches, iodine and glycerine, with indefinite rest in bed as the cheerful prospect, or it was a new growth either of uterine or ovarian origin, in which case it was severely let alone until it had become abdominal, when its mode and rate of growth, its accompanying symptoms, and the various methods of examination through the abdominal walls determined which it was, and what its treatment should be. Such was the awe with which opening the abdomen was undertaken, that only when there was no other prospect than certain death was the operation done. The result was that when the pioneers in this branch of surgery began to operate there was a large collection of sizable ovarian tumors waiting for the knife.

I do not need to go into any detailed account of the changes that have taken place in the last twenty years in regard to the diagnosis and treatment of pelvic tumors. Large ovarian cystomata have become a rarity, so that I venture to say that many gynecologists of ten years' standing have never seen one. The last one which I operated on was in 1890, and she came from the backwoods of New Hampshire. Who of us nowadays sees the "facies ovariana" so graphically pictured and described in the text-books of the 60's and 70's, belonging to women whose vitality has been sapped by the enormous tumors which they have been allowed to carry for years, occasional tapping affording a temporary relief. Nowadays women are educated to seek advice for slight and incipient pelvic disorders, and the thorough bimanual examination reveals the presence of the beginning new growths before they are large enough to have exercised much deleterious effect on the economy. The present sound surgical teaching is to remove pelvic tumors which are giving rise to distressing or dangerous symptoms as soon as they are detected; inasmuch, however, as these tumors differ in their danger to life, and in their prognosis, a careful differential diagnosis is important. The object of this paper is to discuss briefly some of the points of interest in this connection, and to illustrate them by a few cases.

These cases are ten in number, and instead of giving a full history of each, I shall present only the most interesting and suggestive facts.

<sup>1</sup> Read before the Obstetrical Society of Boston, April 21, 1896.

CASE I. Miss S., age thirty, single. Two years ago began to have pain in the iliac regions, lately more pronounced in small of back. Catamenia until three years ago every five to five and one-half weeks, then every four weeks; last three times only three weeks' interval. At operation a small multilocular ovarian cyst of the left side was found and removed. Other ovary was the seat of a small cyst as large as a hickory-nut, and it, too, was removed.

CASE II. Mrs. B., twenty-four, married five and one-half years, three children, two miscarriages. Four years ago had a large heavy uterus, for which she wore a support. Had backache and bearing-down pain, which was made worse by a fall from a chair. Has a feeling of weight in abdomen as though carrying a child, most marked on left side. The only symptom referable to the catamenia is a marked diminution in the past year. At operation a tumor, size of large potato, was found behind the uterus, and was removed. It was a multilocular cyst of the ovary with three cavities. The contents of the largest was hair and fatty material, the second was filled with a yellow gelatinous substance which adhered closely to the cyst wall, and the third contained a transparent watery fluid.

CASE III. Mrs. P., thirty-three, married, no children, no miscarriages. Four years ago had bearing-down pain in lower abdomen, and on examination a tumor was found, since which time she has had frequent and painful micturition at times, and for the past year nausea and vomiting. Constipation. Nothing special as regards menstruation. At operation a cyst of left ovary, size of a cricket-ball, was found filling up Douglas's pouch, and universally adherent. With some difficulty it was shelled out and removed. Right ovary and tube were found diseased and were removed.

CASE IV. Miss G., twenty-two, single. For a year and a half cutting pain in the back, constant, worse on exertion, and also when menstruating. Nothing of importance as regards the catamenia except dysmenorrhea for a few hours. Operation showed a thick walled cyst of left ovary situated behind and somewhat to the left of the uterus, non-adherent. The contents were a brownish thick fluid, probably disorganized blood. Right ovary was also cystic and was removed.

CASE V. Mrs. D., thirty, married, two children. Has had some womb trouble for years. Three months ago, pain in abdomen, bloating and vomiting. For two weeks constant discharge streaked with blood, and gushes of bright blood when on her feet. Menstruation regular. Examination showed a large sensitive uterus. Curetting was advised, which was done by her physician, and the flowing stopped. Six months later she was again seen, when an irregular mass was made out in the posterior cul-de-sac, which felt like a bunch of grapes. One month later celiotomy, at which papillomatous cysts of both ovaries were found. The papillary growth had broken through both cyst walls and had begun to develop on the peritoneum. When seen a year after operation there was a mass felt behind the uterus which was thought to be a return, but as the patient's general health was good and improving, it was decided to wait. Within the past week, which is after an interval of two years, the patient was examined, and no trouble found.

CASE VI. Miss B., twenty-two, single. Eighteen months ago began to flow continuously, using from

one to five napkins a day. No pain. Lost all track of menstruation. Tamponing and curetting by her physician helped for a while; later return of symptoms. Examination showed a movable tumor anterior and to the left of the uterus. The diagnosis was made of a pedunculated sub-peritoneal fibroid or a dermoid. Celiotomy revealed a solid tumor of the left ovary, size of small kidney; no adhesions. Dr. Whitney's report says: "It is a fibro-myoma. The outer wall is composed of a dense, fibrous structure, and within is a loose, connective-tissue growth gradually passing into the centre where the cells are separated by a soft gelatinous substance for quite a distance. I was unable to find any evidence of ovarian structure in the specimen."

CASE VII. Miss C., thirty-two, single. Has complained of constant pain in the back for eight months, following a fall. Under the care of a prominent neurologist other causes for pain were eliminated, and a pelvic examination showed the presence of a tumor in Douglas's pouch, crowding the uterus forward. At operation a cyst of the right ovary, size of a small orange, was found behind the uterus, and removed.

CASE VIII. Mrs. D., thirty-five, married, three children, no miscarriages. For ten years has had menorrhagia and irregular hemorrhages, which have weakened and blanched her. Three years ago was curetted by her family physician. For some time she has used from thirty-five to forty napkins at her regular menstrual period, and once fifty. Looks pale and waxy. No severe pain, but pressure and aching. Frequent micturition. Examination showed an apparently enlarged uterus, irregular in shape, and firm; and a diagnosis of multiple fibroids was made. At operation small ovarian cysts, with hemorrhagic contents and everywhere adherent, were found and were removed.

CASE IX. Miss G., thirty-six, single. For months severe flowing spells, requiring patient to keep in bed, and not controlled by packing or electricity, which was tried by her physician. Feeling of throbbing in left side. Patient pale and weak. Examination showed a tumor of firm consistency at the left of the uterus, and apparently connected with it. Probable diagnosis of fibroid of the uterus was made. At the operation a cyst of the left ovary, size of a small orange, was found. It was universally adherent, especially to the uterus, and in its removal a part of the cyst wall was necessarily left. There was a hematoma of the right ovary. Both were removed.

CASE X. Mrs. B., thirty-three, married, no children, no miscarriages. Had noticed a slight fullness of the abdomen for two years. Menstruation regular until recently, when there have been irregular flowing spells lasting two or three days. Pain in both sides when unwell. Some backache. At operation cysts of both ovaries were removed.

All the foregoing cases resulted in recovery.

This is a small group of cases, but I have confined myself to the consideration of those where the tumor was so small as not to cause any appreciable enlargement of the abdomen, with the idea of seeing how soon they cause symptoms, what they are, and whether any conclusions as to the nature and seat of the tumor can be drawn from them. The statement is commonly made in text-books, that very frequently ovarian cysts develop without the patient's being aware of anything wrong until the abdomen begins to enlarge. I imagine

that in these days when patients consult a physician more readily, such will not be found to be the case. In studying these cases with reference to diagnosis, we find that their symptoms divide themselves, as indeed do those of pelvic disease generally, into three groups: pain, disturbance of function, and reflex manifestations.

Pain was complained of in all the cases but one, more often in back, five cases; lower abdomen, four; confined to left side, one. The backache was the most marked symptom in two cases where the tumor was situated in Douglas's fossa. The case where there was no pain was that of fibroma of the ovary. There were five cases where the tumor was on the left, in only two of which was the pain located on that side. Of three cases where both ovaries were involved pain was located in both sides once. In two cases of tumor of the right ovary no complaint was made of pain on that side. The location of the pain, therefore, is not of much aid in determining the position of the tumor. In the ten cases adhesions were present in four, but these were not the ones where pain was a prominent symptom.

The second group of symptoms has reference to disturbance of functions, namely, menstruation. In only two cases was there no complaint made. By far the most common anomaly (seven out of the ten cases) was an increase in the amount of blood lost. In two cases there was marked menorrhagia so as to deplete and weaken the patient; in one it was moderate, but still excessive. Two showed both menorrhagia and metrorrhagia, in one case the flow having been constant for eighteen months. In one case there were slight intermenstrual flowing spells, and in one the catamenia occurred every three weeks instead of every four or five weeks as formerly. In one case there was a diminution in the amount of the flow. In two cases dysmenorrhea was complained of.

These cases of excessive flowing were interesting for several reasons. In the worst cases the diagnosis of fibroid of the uterus was the probable one, and in four of them intra-uterine treatment was tried, three times curetting, and once electricity, but with either no benefit or very temporary improvement. That in itself was a suspicious circumstance, and might have suggested that the trouble was extra-uterine. The operation showed why the diagnosis was difficult to make. Three of the cases proved to be small ovarian cysts intimately adherent to the uterus and the pelvic walls, so that they formed one solid mass, the fourth was a fibroma, but of the ovary. This connection between adherent ovarian cysts and menorrhagia has been noticed by several observers.

Pozzi<sup>2</sup> says:

"We have already mentioned the fact that menorrhagia often occurs in the case of cysts impacted in the immediate neighborhood of the uterus."

Coe,<sup>3</sup> speaking of small ovarian tumors, says:

"Menorrhagia is the rule, due to chronic congestion and resulting endometritis fungosa. There may be irregular discharges of blood."

Tait<sup>4</sup> says:

"In some instances ovarian tumors give rise to uncontrollable menorrhagia, and I have pointed out that there seems to be a close association with small cystic ovaries and this serious symptom."

<sup>2</sup> American Edition, vol. II, p. 128.

<sup>3</sup> Keating and Coe: Clin. Gyn., p. 661.

<sup>4</sup> Diseases of the Ovaries, fourth edition, p. 190-1.

The only case where there was a diminution in the amount of the flow was that of the dermoid.

There were very few reflex symptoms complained of. Two had nausea and vomiting and bloating, one shortness of breath, and two were very nervous. In five no complaint referable to remote organs was made. These symptoms would naturally come on as later manifestations of pelvic trouble, when the nervous system had become gradually affected by the long continuance and increased size of the tumors.

The number of observations on which this paper is based is manifestly too small to render certain any deductions which may be made from them, yet it may be of interest to formulate some conclusion, both as a stimulus to future and more extensive observations, and primarily as a basis for discussion.

The following propositions are therefore made:

- (1) Small pelvic tumors are usually accompanied by well-marked symptoms.
- (2) Pain is usually present, but its seat does not have any constant relation to the kind of tumor or its location.
- (3) Menstrual disturbances are the rule, and by far the most frequent abnormality is menorrhagia or metrorrhagia or both.
- (4) There seems to be a direct causal connection between severe uterine hemorrhage and cystic ovaries which are closely adherent to the uterus.
- (5) Uterine hemorrhage associated with a pelvic tumor which is uninfluenced by intra-uterine treatment (curetting or electricity) is more likely to be due to an ovarian tumor than a fibroid.
- (6) Reflex symptoms are comparatively rare, and occur in the later stages of the disease.

### A THIRD SERIES OF TWO HUNDRED CONSECUTIVE CASES OF MIDWIFERY.<sup>1</sup>

MARCH 11, 1891, TO AUGUST 8, 1894.

BY A. WORCESTER, A.M., M.D., WALTHAM, MASS.

ONE hundred and twenty-four of these cases were normal, as regards both the labor and the convalescence.

However ready one may be on the threshold of his obstetrical career to meet extraordinary cases, as his experience increases he is sure to prefer the normal to the abnormal; and perhaps for that reason the percentage of abnormal cases tends to lessen rather than to increase, as might be expected from his larger consulting practice.

I wish it were as possible to describe the progress and the management of the perfectly normal, as it is of the exceptional, cases. But after all the safe channel is learned, not so much by the study of painstaking soundings and careful chart notations as by the sight of the wrecks on the bordering ledges. And yet it is by closest observation of the time required on the different courses, as well as of the varied soundings, — observations made and faithfully recorded when all was fair sailing — that the pilot gains the wonderful ability to steer the ship safely through fogs and storms and vexing tides out into the open sea. So our honored former fellow, my old professor<sup>2</sup> taught. And

now in presenting these dry details, many being of normal cases, and in comparing them with similar statistics previously reported,<sup>3</sup> although at first it seems somewhat hopeless to search for helpful deductions yet I have at least found substantiation for some slight changes of method which I trust will not entirely elude description.

Let me first give this general and uninteresting summary of the cases:

Sixty-four, or 32 per cent., were I-paræ, whose average age was twenty-six years; 35, or 17.5 per cent., were II-paræ, average age twenty-eight; 45, or 22.5 per cent., were III-paræ, average age thirty; 21, or 10.5 per cent., were IV-paræ, average age thirty and one-half; ten, or five per cent., were V-paræ, average age thirty-three and one-half; eight, or four per cent., were VI-paræ, average age thirty-six; three, or 1.5 per cent., were VII-paræ, average age forty-one; two, or one per cent., were VIII-paræ, average age thirty-one and one-half; two were IX-paræ, average age thirty-five and one-half; two were X-paræ, average age thirty-seven and one-half; one, or one-half per cent., was a XII-paræ, age forty-two years; one was a XIII-paræ, age forty; six, or three per cent., were not noted.

The average duration of the first stage in 49 I-paræ was 11 h. 30 m., the longest time being 60 h., the shortest 1 h. 30 m.; the average of these same I-paræ in the second stage was 2 h. 30 m., the longest being 7 h. 20 m., the shortest 30 m.

In 25 II-paræ the average duration of the first stage was 4 h. 10 m., the longest being 21 h., shortest 30 m.; the second stage, in 26 cases, averaged 1 h. 25 m., longest 5 h. 15 m., shortest 5 m.

In 33 III-paræ the average duration of the first stage was 7 h. 45 m., longest 23 h., shortest 1 h. 30 m.; the second stage, in 35 cases averaged 1 h. 25 m., longest 9 h. 15 m., shortest 10 m.

In 13 IV-paræ the average duration of the first stage was 6 h., longest 10 h. 30 m., shortest 1 h. 35 m.; the second stage, in 14 cases, averaged 48 m., longest 2 h., shortest 20 m.

In six V-paræ the average duration of the first stage was 7 h. 10 m., longest 17 h., shortest 5 h.; the second stage, in five cases, averaged 58 m., longest 3 h. 20 m., shortest 15 m.

In five VI-paræ the average duration of the first stage was 7 h. 15 m., longest 18 h., shortest 2 h.; the second stage, in 7 cases, averaged 50 m., longest 1 h. 40 m., shortest 15 m.

In five cases of more than six children the average duration of the first stage was 9 h., longest 19 h. 30 m., shortest 2 h.; the second stage averaged 1 h., longest 2 h., shortest 15 m.

In 142 cases the average duration of the third stage was 19 m., the longest 45 m., the shortest 5 m.

As regards the position of the fetus, out of 145 cases where noted, O. L. A. occurred 96 times, or 66½ per cent.; O. R. P., 20 times, or 13¾ per cent.; O. R. A., 18 times, or 12½ per cent.; O. L. P., 5 times, or 3.5 per cent.; S. L. A., 3 times, or 2 per cent.; S. R. P., 3 times, or 2 per cent.; and M. L. P., once, or ¾ per cent. Thus, in 117 cases, 80¾ per cent., the occiput was anterior. In 29 cases, or 20 per cent., it was posterior; in 18 of these cases of posterior position, 62 per cent., operative aid was required; while

<sup>1</sup> Read before the Obstetrical Society of Boston, April 21, 1896.

<sup>2</sup> Dr. John P. Reynolds.

<sup>3</sup> Boston Medical and Surgical Journal, vol. cxx, p. 427, and vol. cxxv, p. 28.



in 117 cases of anterior position only 11, or 9 per cent., went to operation.

As affecting the duration of labor in 22 cases of posterior position, the average duration of the first stage was 11 h. 30 m., of the second 2 h. 40 m.; while in 105 cases of anterior position the average duration of the first stage was 8 h. 35 m., and of the second 1 h. 25 m. But this difference is much less marked because of my increasing readiness to accelerate the delivery in cases of posterior position.

The duration of ineffectual labor is of slight consequence as a determining reason for operating, in comparison with the hopelessness and uselessness of the pains that oftentimes early characterize the labor that must finally be artificially terminated.

In 10 of the cases the baby was born before my arrival, and it is somewhat comforting to find that three of my total 12 cases of post-partum hemorrhage occurred in these 10 cases where "meddlesome midwifery" cannot possibly be charged. But as five other cases of hemorrhage occurred after operative assistance had been given, that is, in 14 per cent. of my operative cases, while of the normal cases only  $3\frac{1}{2}$  per cent. so suffered, it must be admitted that in my hands operative interference predisposes to hemorrhage. However, in none of these cases was the hemorrhage very serious. This was, perhaps, partly due to my use of intra-uterine injections of hot one-per-cent. solution of acetic acid as soon as hemorrhages began, or often as soon as they threatened. But my much better record in this respect is largely due to the criticism and advice given me in this Society by Prof. C. M. Green when I previously was obliged to report a much larger percentage of serious hemorrhages. In following his suggestions I have not hurried the delivery of the placenta,<sup>4</sup> and I have seen that the empty uterus was kept under manual observation for a much longer time directly after the placenta was delivered.

Fifteen of the 200 pregnancies terminated before full term, six of them being abortions occurring before the fourth month. These cases were not left to nature. In each the uterus was thoroughly curetted, and irrigated with hot antiseptic solution. I am more and more convinced of the absurdity of former methods of treating abortions. The advantages to both the patient and the physician of prompt and thorough treatment when once experienced will afterward not likely be foregone. As in every other *per vaginam* operation, the patient should be put upon a table. There is really no intrinsic advantage either to the patient or to the physician in the latter's crouching beside a low bed when operating. Nor is there advantage in using one's fingers as cervical dilators and fetal hooks, or one's finger-nails as curettes. The instruments specially designed for these different purposes are safer in every way. The sense of touch supposed to belong to the finger is not there when most wanted—after crowding through a tight cervix. In none of these cases of abortion was there any trouble at the time or subsequently, and I have no reason to believe that any were criminally induced.

Of the nine cases of premature birth, four were cases of induced labor. Two of these were cases of eclampsia, to be fully reported later in this paper. The other two were cases of contracted pelvis, one of

which has already been reported as preceding and justifying my Cæsarean section of the same patient in her next pregnancy. These three babies died within a few days. In the remaining case, it would almost have been better had the child died, for she has never obtained proper muscular control of her body although bright mentally.

In one of these premature cases the liquor amnii began escaping in the thirty-first week of the pregnancy. By keeping the patient very quiet two weeks were gained, and then the girl baby was brought up in the incubator.

In 37 cases operative assistance was given. This is a large proportion, and curiously it is almost exactly the same as in my previous series.

In seven of these cases podalic version was done. Five of these are reported elsewhere in this paper. In one the face presented, M. L. P., and could not be rotated. In one, a twin, the shoulder presented.

In 30 cases forceps were used. In one of these cases the baby's life was lost, probably from instrumental compression. I have no other regrets in connection with these forceps cases.

Of the seven still-births, three were macerated, two had been dead at least for many hours, and the other two cases are reported elsewhere in this paper.

Full reports are also here given of four of the five cases where the mothers died. The remaining death was upon the tenth day after delivery, from heart disease, where such result was fully expected and had been long predicted as inevitable.

In selecting cases of this series for reporting in detail mention should be made of several cases already reported. Thus one case of Cæsarean section was reported in the *Boston Medical and Surgical Journal* of April 13, 1893. A case of abdominal section for septic puerperal peritonitis was reported in the same journal of June 15, 1893. And a case of occipito-posterior position was reported in the *Journal of the American Medical Association* of July 4, 1891.

#### CASE I. Contracted pelvis. Twins.

At 11 P. M. on June 5, 1891, I was called in consultation to Mrs. A. M., a primipara, twenty-one years old. She had been in labor for three days. The os admitted the finger, and was easily stretched half-open. Her pains increased, but as no advance was made in the next five hours I decided to operate. Her abdomen was much distended but not noticeably so in breadth. The external conjugate diameter was  $6\frac{1}{2}$  in., the diagonal conjugate  $8\frac{1}{2}$  in., between anterior superior spines 8 in., between crests 10 in., between trochanters 12 in. There was no fetal heart-beat; her own pulse was 120, and a loud placental bruit could be heard to the left of the umbilicus. Two heads were found presenting, one O. R. P., the other O. L. A. With high forceps and traction rods, after very hard pulling I delivered in turn the two female macerated fetuses. Each weighed five pounds. The perineum was lacerated half-way, and there was considerable post-partum hemorrhage, but the mother made a good recovery. Two weeks previously she had been frightened by a black snake.

#### CASE II. Uremic convulsions. Death.

Mrs. K. H. F., a sturdy primipara, thirty years old, was entrusted to my care with the history of albuminuria to the amount of one-fourth per cent. for some weeks past. There was marked edema of thighs,

<sup>4</sup> Average duration of the third stage in this series 19 m. and post-partum hemorrhage in  $8\frac{1}{2}$  per cent.; in preceding series 13 m., and post-partum hemorrhage in 10 per cent.



vulva, and of hands and face. Under diuretics this edema rapidly disappeared, and under bromides the headache improved. The urine also improved in amount and character—two pints in twenty-four hours, specific gravity 1.010, but still granular casts. She had reached the thirty-sixth week of her pregnancy when she was seized with a convulsion at 9.30 A. M., June 6, 1891. She was at once etherized. The os was already somewhat dilated, and was fully dilated without difficulty. By means of podalic version at 10.15 A. M. I delivered a three-pound boy, who lived in an incubator for twenty-four hours. But the mother, after perfect recovery from the ether, became maniacal. After three hours of furious raving she suddenly died.

#### CASE III. Twins.

One September night in 1892 I was hurriedly summoned to a farm-house. On my arrival I was met by the farmer at the gate who announced that there was no longer need of a doctor as his wife had dropped him a son as she was crossing the floor from room to room. But, partly perhaps from fear of disappointing me and probably because of her continued groaning, he somewhat reluctantly consented to my going in. The cause of her discomfort was apparent. One son, to be sure, was already in the hands of the neighbors and being washed in cold water with bar soap. But a second son was also struggling with only his left arm and shoulder yet born. Without help, without anesthetics, without antiseptics, I finally prevailed upon him to enter this world feet first. His heroic mother then asked my name. Her question struck me as abrupt, but I soon found her reason, for she gave to one son my Christian name and my surname to his brother.

#### CASE IV. Cervical hemorrhage.

Mrs. P. M. G., a primipara, twenty-six years old, had menstruated for the last time February 8, 1893. Her labor began December 11th, and after several hours of second-stage, ineffectual pains, was etherized and prepared for operative delivery. The child's position was O. R. P., but was manually rotated to O. R. A. High forceps and traction rods were employed. During the very difficult extraction I both heard and felt a distinct tear, which was probably of the cervix, although the perineum was torn to the sphincter ani. The female child weighed nine pounds. Its left arm was paralyzed, but recovered during the first year. The placenta was delivered in thirty minutes, and although there had been a steady loss of blood during the third stage there followed a serious hemorrhage, not controlled by hot douching of the uterus, and on searching for its source, a large artery spurted from the lacerated cervix so as to spatter my assistant. This hemorrhage was finally controlled by deep catgut suturing of the lacerated cervix. And I have ever since carried in my obstetric bag the proper instruments for such an emergency.

#### CASE V. Uremia. Death.

Mrs. S. I. E. when twenty-eight years old had been delivered of her first child only with great difficulty. I mention this earlier confinement because of the uselessness of axis-traction rods at my hands in this one case.

The child's position was O. R. P., but had been rotated to O. R. A. before the forceps and traction rods were applied. The head was pulled half-way down and then could not be pulled further, the traction rods

seeming to pull the head against the pubic arch. On taking off the traction rods the forceps alone delivered the head without much further trouble. The boy baby weighed seven and one-quarter pounds. The mother made a poor recovery, owing to partial puerperal mania. In less than six months afterwards she brought on an abortion, purposely jarring herself by jumping from considerable heights. She was soon again pregnant, and before the seventh month was completed she was complaining of a very troublesome cough and also of a severe persistent headache. Unfortunately her urine was not examined at this time. On February 8, 1893, she walked briskly a half-mile or more declaring that she felt perfectly well. That evening she complained of feeling queerly but was thought to be hysterical. The same night at 2 A. M. she became partially unconscious. The physician who was summoned in my temporary absence was not shown her urine which at that time was first noticed by her husband to be scanty and black. At 6 A. M. on my arrival she was comatose. Her dark urine, drawn by catheter, solidified on boiling. Full doses of pilocarpine were given hypodermically, and at 9 A. M., there being no improvement and the consent of her family having been finally obtained, the cervix was manually dilated and by means of podalic version a three-pound boy was easily delivered. He died in the incubator on the third day. The mother died in four hours, without the slightest sign of consciousness from the time of my arrival.

#### CASE VI. Uremic convulsions.

Mrs. Q., a strong woman, had miscarried twice, the second time at six months, giving birth to a small macerated fetus. On February 1, 1894, I found her comatose, having had several convulsions. She was seven months pregnant and labor had not begun. Her urine, by chance, had been examined the day before, and was found to contain one-eighth per cent. albumin, and granular casts. By manual dilatation and podalic version she was immediately delivered of a small dead fetus. She made a good recovery, and she has since given birth to another macerated fetus, but fortunately without any uremic symptoms.

#### CASE VII. Eclampsia. Death.

Mrs. P. C., a splendidly strong primipara, twenty-five years old, had had headache for three weeks. No physician had been notified. She had been restless and sleepless, and had often vomited. It had been noticed also that she had passed only small amounts of urine, although very thirsty and drinking much water. On March 4, 1894, she was not well enough to leave her bed, and at 11.30 A. M. she had a fit; but not till after she had a second one at 1 P. M., did her husband send for a physician. On my arrival she was having her third convulsion. On her recovery she was so maniacal that it was necessary to etherize her in order to deliver her. Although at full term, there was no sign of approaching labor. By manual dilatation and forceps she was delivered in half an hour of a boy weighing seven pounds, who did well. But the mother died in two hours, apparently in collapse. There had been considerable hemorrhage, but not enough to alarm me.

#### CASE VIII. Depressed frontal bone.

In delivering, on April 28, 1894, a patient, Mrs. M. K., of her fifth child, after rotating the posterior occiput forwards, I found to my horror that the right frontal bone had been so depressed by the forceps

blade that its upper half was bent inwards at a right angle. Not willing that the fine ten-pound girl should live in that plight, I tried various forcible manipulations of the forehead and was finally rewarded by the bent bones snapping back into shape. No trouble has since developed in the child.

#### CASE IX. Version.

Mrs. D. H., a primipara, thirty years old, after being in labor twenty hours, on May 26, 1894, had only progressed so far as the dilatation of the os to the size of a silver dollar. The edges were thin. A soft mass presented, which I thought was either a buttock or a placenta previa. On etherizing and examining with the whole hand, I found a head presenting in O. R. P., and made up of countless small bones, so soft and shapeless that I could not rotate it. Very foolishly I tried to apply forceps, one blade over the face, the other over the occiput. But I could not engage it, and so did podalic version, without much difficulty. The boy weighed eight pounds and did well, although his head was merely a bag made up of bone scraps. The mother's perineum was torn through the sphincter ani, but the silk sutures held well and she made a perfect recovery.

#### CASE X. Pulmonary embolism. Death.

Mrs. K. L. G., a primipara, twenty-seven years old, was a perfectly healthy woman. Her labor, on July 21, 1894, was perfectly normal, lasting only eleven hours, except that during the second stage she breathed very rapidly and seemed to depend upon being fanned. However, as her pains came rapidly and as she was making tremendous muscular exertions, it did not seem much amiss. The day was intensely hot. She had been inhaling for relief a mixture of ethyl bromide, chloroform and alcohol, which I have employed in several hundred cases and continue to use. As her labor drew to its close she declined further use of the anesthetic, and at the very last her difficulty in breathing became very pronounced. A moderate hemorrhage followed the delivery of the seven-pound girl. The mother's breathing became steadily worse. She began coughing up great quantities of froth. Râles were to be found all over the chest. Morphia and strychnia were given in full doses hypodermically. She became more and more frightened, as did I. Her heart was normal. The right lung gradually ceased to work, and she died in twenty-four hours.

### OTHEMATOMA, WITH REPORT OF A CASE.

BY GEO. A. WEBSTER, M.D.,

Aurist to St. Elizabeth's Hospital, Assistant Aurist to Carney Hospital.

**Synonyms.** — Hematoma auris, blood tumor of the ear, insane ear, asylum ear.

**Symptoms.** — We have a tumor of the auricle developed in a few hours or days. Its location is usually on the anterior surface of the auricle. Cases have been noted where it occurred on the posterior surface (6, p. 164). It is most often in the upper part of the auricle, but may invade any part, even the tragus or lobule. The last is a very uncommon site. Randall, however, reports a case (15) of bilateral hematoma following traction on the ear-rings in a girl of fifteen years. Here the swelling was chiefly in the lobule, though extending to the lower end of the cartilage.

The size of these hematoma is variable, but the spontaneous variety, as a rule, are smaller (7, p. 203). The largest may reach the size of a hen's egg. Then all the normal irregularities of surface disappear and we have a smooth, rounded outline (10, p. 14).

The color of the tumor varies in different cases. It has been stated to be livid red or dark purple (2), bluish-red (7, p. 203), the color of the normal skin or even paler (4).

The spontaneous cases may be without subjective symptoms (7, p. 204). The traumatic cases are likely to have considerable inflammatory reaction (18, p. 444), and, as might be expected, are more apt to be associated with pain. We may have heat, tingling and a feeling of tension (6, p. 164). There may be fluctuation, but it is not present in all cases. Impaired hearing or subjective noises do not result unless we have at the same time injury to the middle or internal ear, or occlusion of the meatus by the swelling.

**Cause.** — Othematoma are usually traumatic in origin, although cases occur where no history of traumatism can be obtained. Frankel (17, p. 303) and others believe all cases to be traumatic.

The frequency of this affection among the insane has led many to consider this class of cases idiopathic. The fact that Dr. Brown-Séquard was able to experimentally produce hematoma of the auricle in rabbits by irritation of the restiform body (3) gives added weight to this theory. Politzer refers to a case (7, p. 203) of left othematoma where the right ear showed thickened cartilage in a corresponding area, suggesting tissue change as a cause.

Traumatism is a cause, either by traction or bruising. Prize-fighters, boxers and football-players furnish good examples of the traumatic origin. This deformity of boxers was recognized and considered so characteristic by ancient sculptors that it has been reproduced in works of art. An illustration may be seen at the Vatican in the pugilists of Canova (8).

Hematoma of the auricle is a not uncommon occurrence among football-players. It is, indeed, so common that many adopt preventive measures, as will be described later. Southam (11) says that this ear in football-players is most frequently due, not to a blow, but to violent friction applied to the ear when the blood-vessels of the head are distended. This occurs in what he calls "a tight scrimmage," where a mass of men with their heads down are struggling for the ball. Among American football-players it is most apt to occur, Dr. W. M. Conant tells me, when one side are trying to force the ball through the line of their opponents. And it has been found that the men receive this injury less frequently in getting through the line with the head down and forward than when it is held up and back.

Othematoma may occur at almost any age. A case has been reported in a baby of fifteen months.

Atheromatous disease of the blood-vessels is also a cause (6, p. 163).

Politzer refers to a case (7, p. 202) where the cause was prolonged contact with a cold pane of glass. Cold is mentioned by others as causative.

We may be able to get evidence of no greater injury than the slight pressure of sleeping on the affected ear.

Congestion of the cerebral vessels may be causative. Cases not infrequently occur where no evident cause can be discerned, and which must for the pre-

ent be called idiopathic. Of 27 cases referred to by Politzer (7, p. 203), 21 were traumatic in origin and six idiopathic. Parant records a case (16) where the insane patient beat his head against the wall with such force that the left auricle became ecchymotic, and yet no tumor developed; so that traumatism and insanity together may fail of producing hematoma. The general term insanity is, however, far too broad for scientific discussion, and this phase of insanity can be more intelligently presented by the specialist in mental disease.

**Pathology.**—We have an effusion of blood into the tissues of the auricle. As shown by experiments on rabbits, the effusion in traumatic cases, is either between the cartilage and the perichondrium, or between the perichondrium and the skin (17, p. 308). Buck (2) states that it may be in the cartilage.

In some cases we have softening and degeneration of the cartilage in one or more spots. Here a reparatory process sets in by the sending out of granulations from the perichondrium into the softened tissue. These, like all granulations, have thin-walled blood-vessels which easily rupture, resulting in effusion of blood into the tissues. In traumatic cases we have more or less inflammation of the cartilage (18, p. 445) and of the perichondrium. If we have suppuration or necrosis of the cartilage, a considerable loss of tissue may result with subsequent deformity. Then we have a shrivelled or contracted auricle. On the other hand, blood-clot may become organized, leaving permanent thickening.

In traumatic cases the left ear is most frequently affected. This might be explained among boxers by the fact that this ear is most exposed to right-hand blows of assault. Many other traumatic cases would arise in this way. Of 19 cases referred to by Politzer (7, p. 203), 13 were left-sided. Of these, 11 resulted from a blow with the hand or fist.

In some cases of hematoma, calcification may result (6, p. 165). Hematoma of the auricle has been reported in a cat's ear, presumably as a result of violence, by Campbell (12, p. 55), Tomkins (13, p. 187) and by Eager (14, p. 648).

**Prognosis.**—When untreated, hematoma may be absorbed, may be ruptured, may suppurate or may become organized. In some cases considerable deformity (4) of the auricle may follow, and the patient should be warned accordingly.

Field says (3): "In my experience the results of treatment of whatever kind, are in the majority of cases disappointing. A shrunken, though thickened ear often remains; the deformity due to cicatrization is, however, more marked after organization of a clot."

Southam (11, p. 1277) also emphasizes the last statement. He thinks, moreover, that if we incise and suppuration follows, the deformity will be greater.

Hun, writing in 1870 (10, p. 28), when suppuration was a common event in these cases, believed that those cases which ruptured or were opened artificially, had far greater deformity than those which were absorbed.

To-day, however, I believe that, provided asepsis is maintained, the least deformity results when the contents are promptly removed, excepting, perhaps, the mild cases which easily disappear with pressure.

In football-players the prognosis is distinctly less favorable if they continue to play and pay no attention to the ear (11, p. 1277). The swelling is then likely to increase and it may rupture.

The prognosis is more favorable in the traumatic than in the idiopathic cases, except where there is a deep-seated lesion of the cartilage (7, p. 204).

The prognosis for the insanity in cases where hematoma are found, is generally considered to be bad. Campbell has, however, seen several cases of recovery from insanity where the patients have had this condition present (12, p. 55).

**Prevention.**—The frequency of this affection among football-players has led some of the English athletes to wear a tight-fitting cap with flaps for protecting the ears in playing (11). In this country a similar device has been used, and also a wide band bound about the head so as to inclose the upper part of the auricles. The majority of players, however, do not adopt preventive measures, except to prevent recurrence, after having been once injured.

**Treatment.**—Opinions differ in regard to this. Gruber advocates aspiration if the contents are fluid, and incision if coagulated blood be present (18, p. 445).

Dr. W. M. Conant, who has been associated with football-players for eight years and who speaks from an observation of at least 25 traumatic cases occurring among them, states that he believes the best results are to be obtained by immediate aspiration, with incision if necessary to evacuate the contents, followed by pressure to prevent recurrence; that the contents when not removed are apt to become organized and leave greater deformity; that when cases have been seen early and at once evacuated, the subsequent deformity has been slight; that he has never seen perichondritis result from aspiration or incision; that proper protection to the ear in playing will very materially lessen the number of cases.

Dr. C. A. Porter, who has seen a number of traumatic cases among football men, states that it has been his custom to aspirate at once and repeatedly if necessary; that this method of treatment speedily relieves the pain; that the results have been satisfactory; that no harm has resulted from aspiration.

Aspiration should be followed by pressure to prevent recurrence. Pressure is best applied by a pad over the auricle held in place by a band around the head and forehead. When the hematoma is incised the line of incision should be so made, if possible, that the scar will come under the border of the helix.

After incision Dench (4) recommends packing the cavity with iodoform gauze so that it will heal from the bottom. He also suggests that the deformity will be less if we make an incision anteriorly to evacuate the contents and then at the lowest point cut through the cartilage and skin to the posterior surface of the ear. We may then suture anteriorly and allow the incision to heal by first intention, keeping the posterior wound open for drainage until the cavity is obliterated. Dench also recommends curetting after incision in cases where there is degeneration of cartilage.

According to Politzer (7, p. 205), if the pain continues after four or five days without decrease in the swelling, we have the indications for opening the tumor and removing the contents.

In traumatic cases it has been proposed to tie the posterior auricular artery and shut off a chief source of blood supply (10, p. 27), but the results of such treatment are not recorded.

Asepsis is, of course, essential throughout the oper-

ative treatment if we wish for satisfactory results. If we fail in this, perichondritis is quite apt to make convalescence very long and unpleasant. To prevent any possibility of this, some of our best aurists prefer to give other measures a thorough trial before operating. Their position is supported by Frankel's experiments on rabbits (17, p. 304), which showed no more speedy cure by operative than by expectant treatment, and he therefore recommends the simpler.

Grove (9, p. 210), while he has seen bad results follow in untreated cases, has seen excellent results follow the passive as well as the active or surgical treatment.

In traumatic cases, cold applications used immediately may help to limit the effusion. As soon as possible, however, the auricle should be put under firm pressure by means of compress and the roller bandage. Massage is also recommended as a valuable method of treatment. We are advised by Politzer (7, p. 205), however, not to try this till the third or fourth week.

#### REPORT OF A CASE.

On December 26, 1895, I was consulted by Mr. A, a man forty years of age, concerning a swelling of his left auricle. He had observed it a few days preceding this. It caused him no discomfort, but he objected to the deformity. Examination showed a small tumor, the size of a hazel-nut, on the upper anterior surface of the auricle. It involved the helix, the fossa of the helix and the antihelix. The skin over it was normal in color. Fluctuation was present. I was unable to find any cause, except that he stated that at times when he had slept so that the ear was pressed against the pillow, there would be a feeling of numbness in the morning.

I made a small incision to remove the fluid. It was hardly more than an aspiration. The fluid was apparently serum slightly stained with blood. The auricle after removal was very nearly normal.

As the patient objected to any conspicuous dressing, nothing was used to give pressure but contractile collodion. This did not prevent recurrence. I therefore determined to follow the method suggested by Dench, as the most speedy and radical.

On January 9th, I made an incision anteriorly along the line of the fossa of the helix, evacuating a fluid similar to that previously removed. This showed the effusion to lie between the cartilage and the perichondrium. The cartilage was smooth, yellow and shining, and showed no evidence of necrosis. An incision was made through the cartilage and skin to the posterior surface of the auricle. The anterior wound was sutured. The posterior opening was packed with gauze. The ear was covered with a layer of gauze held on by a cotton collodion dressing.

January 11th. The anterior incision was healed by first intention. The posterior opening was dressed daily till January 17th. It had then closed. The auricle was then slightly thickened. This thickness gradually disappeared.

June. There has been no recurrence. There is no deformity, although the line of incision anteriorly can be seen on careful inspection in the fossa of the helix.

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### Clinical Department.

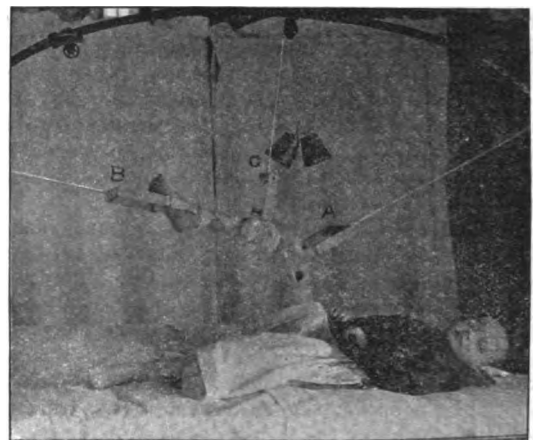
#### A METHOD FOR THE GRADUAL REDUCTION OF FLEXION AND SUBLUXATION OF THE KNEE.

BY ERNEST B. YOUNG, M.D., BOSTON.

THE following method has been devised by the writer for the gradual reduction of flexion of the knee combined with subluxation of the head of the tibia—a common result of tumor albus.

As far as can be ascertained, gradual reduction of this deformity, according to the principles of the genuclast, has never been attempted except in the cases mentioned in this article.

The method is simple, and can be successfully carried out by any one understanding the principles involved; whereas the use of the genuclast, for forcible reduction, requires considerable skill and judgment.



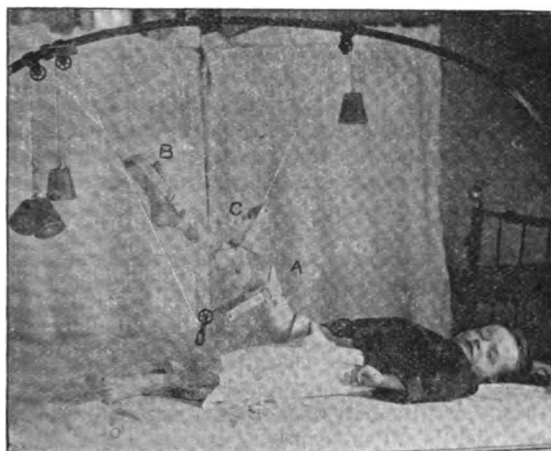
The accompanying illustrations show the apparatus used for this purpose at the hospital. The iron arch with movable pulleys is not at all essential, as a piece of light scantling supported by an upright at each end answers the purpose equally well; small galvanized iron pulleys being tied to this wherever desired. The uprights should be firmly fastened to the bed. The child is kept in position by being strapped to one of the frames used in the recumbency treatment of caries of the spine.

Thickly padded pieces of tin, three inches wide and curved to fit the leg, are attached at the points where the traction straps exert pressure. The traction straps are best made of adhesive-plaster strips, the ends of which are folded upon themselves to prevent their

becoming adherent where they pass through the buckles of the spreader. The advantage of plaster straps is that they do not slip on the tin, and so are not displaced by the slight movements of the child.

The first step in the treatment is the reduction of the subluxation of the head of the tibia, as is shown in the first illustration.

The counter-extension strap A holds the lower end of the femur from moving forward, and the whole force of extension B applied to the lower leg, tends to separate the tibia from the femur. The traction at C pulls forward the head of the tibia. As much weight may be applied as the case can stand with comfort; but the amount attached to B should be sufficient to prevent the pull on C from disturbing the position of the leg while the tibia is being brought into place.



After the backward displacement is fully overcome, all that is necessary is to keep the tibia in position and slowly pull out the flexion after the manner shown in the second illustration. The weight at C is reduced until just sufficient to keep the head of the bone forward; while that at B is increased as much as possible. The traction at A is carried downward through a pulley attached to the frame on which the child lies and upward over another pulley; so that the downward pull on the lower end of the femur counteracts the tendency of C to flex the knee-joint.

When the deformity has entirely disappeared a plaster bandage is applied from the foot to as high a point on the thigh as is possible.

The method described above can be used only in the cases which have not yet reached the stage of bony ankylosis.

Many parents dread having their children take ether; and if by such simple means a result can be obtained equal to forcible straightening, there seems to be no reason why it should not be given a trial, since there is still recourse to more radical measures if this fails.

The rapidity and ease with which the deformities yielded to this treatment can be judged from the short reports of the cases in the wards of the Children's hospital, which Dr. E. H. Bradford and Dr. H. L. Burrell kindly allowed me to treat by this method.

CASE I. Boy, three years old. Entered hospital with flexion of 90° and a bad subluxation of the head of tibia. This condition had existed for three months. After a few days of rest with a fixation splint, the

apparatus was applied and at the end of twenty-four hours the subluxation was fully reduced. Two days after the commencement of treatment, the leg was perfectly straight, and was put up in a plaster bandage.

CASE II. Boy, three and one-half years old. Flexion of 45° and slight subluxation after an erosion of the joint. Twenty-four hours sufficed to entirely reduce deformity.

CASE III. Girl, six years old. Flexion of 90° for past three months, and considerable subluxation at time of entrance. The subluxation was reduced in twelve hours, and at the end of thirty-six hours, the deformity was entirely gone.

## Medical Progress.

### REPORT ON PROGRESS IN THORACIC DISEASES.

BY GEORGE G. SEARS, M.D.

#### THE SIGNIFICANCE OF THE DIAZO REACTION IN PHTHISIS.<sup>1</sup>

BECK, from investigations carried out in the Institute for Infectious Diseases at Berlin, has come to the conclusion that the appearance of the diazo reaction in the urine of patients suffering from phthisis makes the prognosis unfavorable, while its long continuance forebodes an early death.

#### THE ETIOLOGY OF SEROUS PLEURISY.<sup>2</sup>

Aschoff, from a study of two hundred cases, clinically and bacteriologically, has arrived at the following conclusions:

- (1) Serous effusions are almost invariably free from pus-producing organisms. If they are present, the effusion sooner or later becomes purulent, except perhaps when pneumococci are present.
- (2) Purulent effusions may heal without operation.
- (3) The occurrence of isolated pleurisy of rheumatic origin is very doubtful: at all events it occurs very seldom.
- (4) Effusions into the pleural cavity occurring in acute rheumatism, are almost without exception complicated with affection of the heart.
- (5) Salicylic acid is of no special value in the treatment of serous pleurisy.
- (6) So-called idiopathic cases almost always arise from tuberculosis. They may, however, recover.

#### TUBERCULOSIS AND HEART DISEASE.<sup>3</sup>

Weismayr revives the old question as to the liability of patients already suffering from heart disease being attacked by pulmonary tuberculosis. Although he reports six cases in which this occurred, they form so very small a proportion of the large number of cases of cardiac disease and especially of tuberculosis, which have passed under his observation, that he is driven to the conclusion that the hyperemic condition of the bronchial mucous membrane dependent on the former furnishes a very poor soil for the development of tuberculosis, and even if it has already begun its progress is very slow, while it may run its course without symptoms.

<sup>1</sup> Charité Ann., xix, p. 583.

<sup>2</sup> Zeitschrift f. klin. Med., H. 5 and 6, 1896.

<sup>3</sup> Wien. klin. Woch., Nos. 8 and 9, 1896.

PNEUMOTOMY.<sup>4</sup>

In a paper on the surgical treatment of certain cases of disease of the lung, Quincke gives the histories of 17 cases of his own together with a summary of all cases which have been reported since 1887. Of the latter there were 20 cases of acute pulmonary abscess, either simple or gangrenous, of which 13 were cured and seven died, and 34 chronic cases (simple abscess with bronchiectasis, putrid abscesses, putrid bronchiectasis and putrid processes from foreign bodies) of which seven recovered and 13 died. In three the result was negative, while in 11 partial success was obtained. Among his own patients three acute cases were all cured, while of the chronic cases two were cured, five died, six were partially successful and one was unsuccessful. From this it would seem that the prognosis in the acute cases is so good that operation may be recommended, even where the possibility is present that it may not in the end be necessary. In chronic cases, however, the prognosis is considerably less favorable, and much depends on the situation of the lesion. In cavities of the upper lobe operation is less often indicated, although at times with extensive resection of the ribs much may be accomplished, but when situated in the lower lobe operation and drainage is the preferable mode of treatment. The fouler the contents the more necessary is surgical interference.

LEUCOCYTOSIS IN TUBERCULAR PROCESSES.<sup>5</sup>

Stein and Erbmann summarize the results of their investigations as follows:

(1) In beginning phthisis the normal number of white corpuscles is present, as well as in advanced cases, whether confined to the apex or involving other portions of the lungs, provided it has not gone on to cavity formation.

(2) In attacks of hemoptysis they observed in most cases a moderate leucocytosis, which subsided as the hemoptysis decreased in amount.

(3) In advanced processes they found the normal number in cases of infiltrating tuberculosis, whether or not accompanied by slight destructive changes.

An increase in the number of leucocytes was found in cases with cavity formation, in chronic suppuration resulting from caries, in terminal exudative inflammatory processes, and in hyperplasia of the lymph glands in cases which progressed without extensive destruction. In tuberculous individuals, therefore, in whom no chronic suppurative or exudative inflammatory process exists, an increase in leucocytes shows the presence of an ulcerative process in the lungs, that is, cavity formation, whose time of onset may be definitely determined if previous blood-counts have shown a constantly normal number of leucocytes. If the normal number of leucocytes is present in tubercular cases, the existence or the formation of a cavity, at least of any appreciable size, may be ruled out. The cause of the leucocytosis is not the tubercular virus as such, but a secondary infection leading to breaking-down of the lung tissue; a septicemic process which is produced by the activity of a variety of virulent bacteria and cocci. In their opinion the cause of the leucocytosis lies in the destruction of tissue, since from the direct absorption of the pus elements, leucocytes, into the

lymph and blood channels, an increase in their number takes place.

CHYLOUS AND CHYLIFORM EFFUSIONS INTO THE PLEURA AND PERICARDIUM.<sup>6</sup>

Bargébuhr reports three cases of chylous pleural effusion and gives a synopsis of all the cases which have appeared in literature. Although extending over a period of 261 years, they number but 41 all told, most of which have been recently observed. In the etiology of true chylothorax mechanical injuries and new growths of the ductus thoracicus are the most common factors, while hydrothorax chyliformis s. adiposus is dependent on a fatty degeneration of the pus or of the cells from the new growth, or on lipemia. The differential diagnosis between these conditions is possible only when an actual injury to the chyle or lymph passages can be found or when a chemical examination gives unquestionable results, the presence of sugar being the only sure test.

The prognosis in chylothorax is unfavorable, though a few cases have recovered when it was caused by injury. The paper closes with an account of the only case of chylopericardium thus far reported.

CHRONIC MEMBRANOUS BRONCHITIS.<sup>7</sup>

Claisse says that the nature of chronic membranous bronchitis has been but little studied, and gives the results of a bacteriological examination of the membrane from a patient who had expectorated bronchial casts for several years. Cultures showed an inconstant and small number of staphylococci and various forms of bacilli, but the only micro-organisms found in abundance and in all tubes which did not prove sterile, were streptococci. Cut sections showed the presence of various microbes on the surface of the false membrane, probably through contamination by the saliva, but in its centre only streptococci were met with. Fragments of the membrane introduced into the bronchi of animals, or beneath their skin, produced practically no reaction, while inoculation experiments made with cultures of the germs were equally negative, yet, in spite of their lack of virulence, their constant presence shows that they were not a mere accidental coincidence, but that the disease was due to a chronic infection by them. Antistreptococcic serum was tried with apparent success, the patient leaving the hospital in better condition than she had been for years.

FLUCTUATION PHENOMENA IN PLEURAL EFFUSIONS.<sup>8</sup>

Bard calls renewed attention to some physical signs present in pleural effusions which were first described by Tripier, but which never received the notice of the profession which in his opinion they deserved. They depend for their presence on the fact that fluctuation waves may be produced in the fluid within the pleural cavity, similar to those in the abdominal cavity in cases of ascites. According to Tripier they are best detected by the following method of examination, either one or both hands being used. In the former case the hand practises both percussion and palpation over the base of the thorax behind. Percussion should be light and not followed by immediate withdrawal of the hand, which should remain closely applied to the skin, yet without exercising any

<sup>4</sup> Mitchell, aus d. Grenzgebieten d. Med. u. Chir., II, p. 1, 1895. Schmidt's Jahrb., No. 5, 1896.

<sup>5</sup> Deut. Arch. f. klin. Med., Bd. lvi, Hft. 3 and 4.

<sup>6</sup> Deut. Arch. f. klin. Med., Bd. lvi, p. 410.

<sup>7</sup> Comp. Rend. Soc. de Biologie, April 3, 1896.

<sup>8</sup> Lyon Medical, September 5, 1895.



pressure, in order to perceive the liquid return waves. If both hands are used, one closely applied to the base of the chest behind and a little to the side, but without pressure, awaits the wave which is set in motion by the other, which percusses lightly with the palmar surface of the extended fingers. Bard has found that the fluctuation is more intensely felt in the latter case from behind forward, and directs that the anterior hand be placed at the level of the costo-diaphragmatic sinus while the other hand percusses the base behind. If the percussion strokes are given with sufficient rapidity, a sensation of *tremblement* is given, which is very characteristic and especially easy to recognize.

These signs may not only furnish valuable evidence when the diagnosis between a pleural effusion and pulmonary consolidation is doubtful, but in cases where no doubt of the presence of an effusion exists, their presence or absence may throw considerable light on the condition of the fluid, whether free or encapsulated, and on the amount of pressure within the pleura as well as on the condition of the lung beneath it.

#### FIBRINOUS PNEUMONIA AS A COMPLICATION OF DIABETES MELLITUS.<sup>9</sup>

Fibrinous pneumonia as a complication of diabetes mellitus has received little attention compared with the amount which has been written on the other pulmonary complications of this disease. This is especially true of its clinical aspect so that the report by Bussenills of a carefully studied case, brings up several points of interest. The patient was a woman, fifty years old, who had been passing a saccharine urine for several months at least before the onset of the pneumonia, but whose general appearance showed no effect of the disease. Death occurred in collapse on the thirteenth day after the initial chill. A double pneumonia was proved by the autopsy. Whether any diminution of the sugar, as observed by v. Noorden and Leube, occurred during the course of the pneumonia cannot be told as the patient was not under observation before the attack, but during the last seven days of her life the amount varied from 8.5 per cent. to 5.8 per cent., in inverse proportion to the rise and fall of the temperature curve, except on the day of her death when both fell together. The presence of  $\frac{1}{4}$  per cent. or more of sugar in the sputum was also demonstrated, and, although not an unusual constituent of the sputum of patients suffering from uncomplicated pulmonary diseases, the amount was considerably larger than he found in other cases. The prognosis in these cases is very unfavorable. He appends some statistics furnished by Senator, in whose experience with nearly 700 diabetic patients there were seven cases of pleuro-pneumonia with four deaths; one fatal case of double broncho pneumonia, and five of influenza pneumonia with three deaths. In none of these cases did the sugar entirely disappear from the urine, but it sank in one case during the period of fever from 3.55 per cent. to 1.78 per cent.

#### PNEUMONIC PERICARDITIS.<sup>10</sup>

Aski points out that Netter in 1886 demonstrated the possibility of a pneumonic pericarditis without the presence of a declared pneumonia, although, as a rule,

it is secondary to the latter by contagion through the pulmonary lymphatics. It occurs more often in adults than in children, and in males than in females, in pneumonia of the right lung than that of the left, and more frequently during gray hepatization than during other stages of the disease. It often passes unnoticed, being masked by the signs and symptoms of the pneumonia. Its onset is suggested by a sudden depression of the temperature curve with algidity and cyanosis of the extremities, or by a rise succeeding a more or less marked depression. Its presence, especially in the purulent or hemorrhagic form, increases the gravity of the prognosis. Paracentesis may give a hope of recovery.

#### CHRONIC PERICARDITIS SIMULATING CIRRHOSIS OF THE LIVER.<sup>11</sup>

Pick reports three cases in which the clinical picture was that of cirrhosis of the liver, but in which the autopsy showed, in spite of the fact that there were no symptoms of heart disease, that a chronic adhesive pericarditis was the primary affection to which the condition of the liver was secondary. He sums up his paper as follows: There is a complex of symptoms which simulates mixed forms of cirrhosis of the liver, with hepatic enlargement and great ascites, but without icterus, which is due to an increased growth of the connective tissue of the liver from the disturbance of circulation produced by a latent pericarditis. This may lead, through stasis in the portal circulation, to the most enormous ascites. This is more common in early life but nevertheless is also observed in later years. In the differential diagnosis stress must be laid on the lack of any etiological factor for cirrhosis of the liver, a history of the previous pericarditis and edema of the feet, and a thorough examination of the heart.

#### A CARDIAC CURIOSITY.<sup>12</sup>

Fuller and Gibbs report a case which is interesting as a medical curiosity. The patient was a girl fifteen years old, belonging to a family many members of which suffer either from phthisis or heart disease. She has always enjoyed fair health, and now complains of no other symptom than that she gets easily out of breath. "The heart is not enlarged or dilated; there is a good first sound, followed immediately by a murmur and a low second sound. The murmur is mitral and can be heard, when the patient is fully dressed, at a distance of twelve feet or more. It can also be heard when, with the chest exposed, she is placed three feet away from a closed door and the listener is the same distance on the other side in the hall." The murmur varies somewhat in intensity from day to day, but it is only very rarely that it cannot be heard a foot away from the chest without the stethoscope.

#### TUBERCULAR AFFECTIONS OF THE HEART.<sup>13</sup>

In an interesting paper on this subject Leyden says that apart from pericarditis, tuberculosis of the heart appears in three forms: in the cardiac muscle, in the valves, and in thrombi situated between the trabeculæ of the auricle and ventricle. In the first, scattered tubercles are found in cases of general miliary tuberculosis in the cardiac muscle, interest chiefly centering

<sup>9</sup> Berl. klin. Woch., 1896, No. 14.

<sup>10</sup> Th. de Paris, 1896, No. 358; British Medical Journal, Aug. 1, 1896.

<sup>11</sup> Zeitschr. f. klin. Med., xxix, H. 5 and 6, 1896.

<sup>12</sup> Lancet, April 4, 1896.

<sup>13</sup> Deut. med. Woch., 1896, No. 2.



in the contrast presented to the skeletal muscles, which are entirely immune. In the second form a tubercular endocarditis may lead to valvular changes, but valvular disease developing in the course of phthisis is by no means necessarily the result of infection by the tubercle bacilli. Diagnosis can be made certain only by a bacteriological examination. In one of Leyden's cases streptococci alone were found in the affected portions of the endocardium. Most interesting of all, however, from the pathological standpoint, is the occurrence of tuberculosis in various stages of development in cardiac thrombi, although the number of times in which this has been observed does not seem to have been very great. Both here and in the endocardial form the bacilli were found much less frequently free than embedded in cells where they were seen to multiply. Their dissemination through the circulation by means of these infected cells is therefore very probable and may furnish the explanation in certain cases for the cheesy degeneration which occasionally occurs in an apparently frank pneumonia.

#### ALCOHOLIC MYOCARDITIS.<sup>14</sup>

Aufrecht speaks of a class of cases which he formerly diagnosed as chronic nephritis with secondary hypertrophy of the heart, but in which closer study has convinced him that myocarditis was the primary trouble, to which the condition of the liver and the transitory appearance of albumin in the urine were consecutive. Etiologically the affection is always the result of overindulgence in alcohol, the form being immaterial. Pathologically an idiopathic hypertrophy and dilatation of the heart is found with all the characteristic effects of chronic stasis in liver, spleen, lungs, kidneys, etc. Clinically it is most common among men of middle life. It begins insidiously, the first symptoms being breathlessness, but with advancing cardiac weakness anasarca, ascites, transitory albuminuria and hepatic enlargement develop. Under proper treatment combined with abstinence from alcohol recovery may be rapid, but even in progressive cases the disease may extend over years. Apart from chronic nephritis and its results fatty heart, valvular disease and heart strain may be mistakenly diagnosed. Microscopically, a high grade of fragmentation of the walls and papillary muscles of the left ventricle was present in every instance, while in a few cases the right was also similarly affected though in less degree.

#### THE DURATION OF LIFE IN CASES OF INFECTIVE ENDOCARDITIS.<sup>15</sup>

Hollis says that the most curious part about the reported cases of recovery from infective endocarditis is their rarity, and for this result the nomenclature of the early stages of the disease is largely responsible. He reports briefly two illustrative cases which "go far to show that this disease has periods of pathological calm, in which the recuperative powers of a patient may to some extent repair the damage produced during the active bacterial stage. As time goes on and the patient's strength becomes more and more undermined, the intermissions usually become shorter and less complete, whilst the active stages are prolonged in duration, although seemingly less acute pathologically. If we date the commencement of infective endocarditis from the final act of this life's tragedy, as

is usually done, we obtain an inaccurate, and, he considers, an altogether mistaken conception of the clinical features of this insidious malady. The assumption that the final break-down of the circulatory apparatus in such cases is due to the sudden invasion of bacteria among the diseased tissues of a previously healthy aseptic heart is one that cannot be substantiated either clinically, pathologically or bacteriologically. Cases of infective endocarditis generally recover from the first attacks, and under favorable conditions many live on for many months and occasionally for years."

#### A FEW MORE WORDS ON STROPANTHUS.<sup>16</sup>

Balfour contrasts the action of digitalis and stropanthus decidedly to the detriment of the latter. He says that "all the benefits we obtain from the use of digitalis are inseparably connected with its tonic action; they flow from the power that digitalis has of increasing muscular elasticity, and the improved metabolism of all the tissues, but especially of the myocardium, that follows this. Digitalis is no opium to the heart; it does not relieve by narcotizing but it softens cardiac irritability by strengthening the cardiac muscles and it assuages cardiac pain by improving cardiac metabolism, failure of which has been the cause of pain. These benefits are readily obtained by very moderate doses of the drug, and though great benefit may at times be more rapidly obtained by the judicious administration of larger doses, yet the long continuance of even small doses is often followed by the very best results, while the abuse of the drug, so frequently accompanied by distressing, if not alarming symptoms, proceeds from an entire misconception of the true action of digitalis."

On the other hand, "the action of stropanthus, like all its congeners of the apocynaceæ, is that of a cardiac poison and not a cardiac tonic. In large doses — though from the form of the drug these doses may be really small — it forces the heart into a fatal systole. In smaller doses it stimulates the heart to increased action, and in calling on its reserve of energy without improving its metabolism it causes death in diastole from exhaustion, and the more feeble the heart is the greater the risk attending this peculiar action. Stropanthus may occasionally be of use in cases of ruptured compensation, but any assistance which it gives is at the expense of the cardiac reserve, and the patient is only saved from serious disaster by the benefit he has derived from rest, warmth and nutritious food, that is, by improvement of his environment generally.

"Stropanthus is thus at all times an uncertain and dangerous drug to employ, and one entirely unworthy of being called a remedy.

"It is quite otherwise with digitalis. This drug does not act by calling on the reserve of cardiac energy; but by improving the nutrition of the organism generally and especially of the myocardium, it adds to this reserve, and aids any improvement in the environment, not only to tide over a temporary disability, but also to restore the myocardium to such a condition of comparative health as will enable it to withstand all the deteriorating influences to which it may be exposed."

BICYCLE riding has been introduced into an insane asylum at Kalamazoo as a beneficial exercise.

<sup>14</sup> Dent. Arch. f. Klin. Med., Bd. IIv, p. 615.

<sup>15</sup> Journal of Pathology and Bacteriology, III, p. 380.

<sup>16</sup> Edinburgh Medical Journal, June, 1896.

## Reports of Societies.

### THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

REGULAR meeting April 21, 1896, the second vice-president, DR. E. J. FORSTER, in the chair.

DR. J. C. WARREN reported

#### A CASE OF GANGRENOUS CYSTITIS AND SLOUGHING OF THE BLADDER: RECOVERY.<sup>1</sup>

DR. M. STORER referred to a case where the entire lining membrane of the bladder was removed. A year later the bladder could hold a considerable amount of urine, and the condition was entirely satisfactory.

DR. F. H. DAVENPORT read a paper on

#### THE DIAGNOSIS OF SMALL OVARIAN TUMORS.<sup>2</sup>

DR. J. R. CHADWICK said that in his experience small ovarian tumors often give rise to no symptoms or very trifling ones. Even large tumors are often not recognized, the patient suffering no discomfort from them.

DR. J. B. SWIFT should agree with Dr. Davenport on pain being a symptom in most cases of tumors of this class. He was especially interested in his paper. He would agree with him in the difficulty and oftentimes impossibility of differentiating an ovarian from a uterine tumor.

DR. G. J. ENGELMANN said that the surgeon of today was indeed fortunate in that he had to deal with small tumors rather than the very large ones formerly so prevalent. Patients formerly were unwilling to be operated on until the tumor became of excessive size and they were practically moribund. All his earlier cases were of this class.

He has always taught that pain and nervous symptoms accompanied the small growths, while large ones annoyed only by their size.

Menorrhagia and metrorrhagia are often symptoms of ovarian cysts rather than of fibroids.

DR. DAVENPORT said that the most interesting feature in these cases was the difficulty of diagnosis between small adherent ovarian cysts and fibroids. This was increased by the fact that in these cases the prominent symptom was menorrhagia or metrorrhagia. Even the probe would not settle the diagnosis as in cases of tortuous canal it may not penetrate more than the natural depth.

The study of these cases illustrated how misleading one's general impressions as to the frequency of occurrence of symptoms may be. When the history of each case is studied and the symptoms noted the results will often be contrary to one's preconceived ideas.

DR. CHADWICK said that in his experience simple ovarian cysts, up to the size of an orange, exist without symptoms unless caught in Douglas's pouch or unless they are held by tender adhesions. In these cases pain exists. When it extends down the anterior crural nerve it generally means inflammation of the tube present or past.

DR. A. WORCESTER reported

#### TWO HUNDRED CASES OF MIDWIFERY, THIRD SERIES.<sup>3</sup>

DR. EDWARD REYNOLDS said he had once seen the dimpling-in of the skull of a new-born infant from

pressure. Here, as in Dr. Worcester's case, manipulation restored the bone and no harm resulted.

DR. J. R. CHADWICK said that he had been taught to bleed in puerperal uremia by Dr. Fordyce Barker, and he had seen the good results of this in practice.

DR. G. H. WASHBURN mentioned a case of eclampsia where the patient was passing a large amount of urine with very small amount of albumin. There were three convulsions in all, one before delivery. The patient made a good recovery.

DR. ENGELMANN wished to emphasize the importance of venesection in eclampsia and that, too, without limiting its employment to plethoric patients.

DR. C. M. GREEN said that he was more and more impressed with the difficulty of making a prognosis in eclampsia. He thought we had much to learn as regards both pathology and treatment.

DR. C. W. TOWNSEND said he had been much interested by reading lately a paper by Dr. Tweedy, in the *Dublin Journal of Medical Sciences*, in which the writer opposed some of the routine methods of treating eclampsia. For example, Tweedy says that chloroform, chloral and bromides being powerful depressing agents should not be used in eclampsia. Moreover, the anesthetic tends to cause edema of the lungs and cyanosis, and he believes in some cases actually increases the severity of the attacks. Pilocarpin Tweedy places among the most fatal drugs for uremic patients, because of its action on the heart and in promoting free salivation and bronchial secretion. He is also opposed to forced delivery, believing that the reflex irritation increases the eclampsia. Tweedy does believe in morphine and in blood-letting.

DR. C. M. GREEN said he had seen a paper in the *Lancet* taking opposite views from those expressed by Tweedy.

### AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTY-SECOND ANNUAL MEETING, PHILADELPHIA, PA., JUNE 3, 4, 5, 1896.

(Continued from No. 14, p. 348.)

#### HEMIPLEGIA AND DEMENTIA.

DR. GEORGE J. PRESTON, of Baltimore, presented in this connection the specimen from a patient with hemiplegia and dementia, which showed a tumor occupying the right hemisphere and a condition of condensing osteitis of the skull.

DR. CHAS. K. MILLS, of Philadelphia, said that tumors of the brain have not only been confused with acute mania but also with general paresis. It is sometimes very difficult to differentiate. It is not known that tumors limited to the thalamus produce any characteristic symptoms. They occasion mental symptoms on account of their destruction of associating cerebral fibres.

DR. SACHS had seen a case of brain tumor in a child in which mental symptoms predominated. The autopsy revealed a large tumor in the right frontal lobe. He did not feel convinced that the mental symptoms in Dr. Channing's case were attributable to the growth in the thalamus. Why might not this patient have had the mental disease independent of the tumor?

DR. THEODORE DILLER, of Pittsburgh, mentioned a case of tumor of the cerebellum in which the earli-

<sup>1</sup> See Journal, vol. cxxxiv, page 641.

<sup>2</sup> See page 353 of the Journal.

<sup>3</sup> See page 355 of the Journal.

est symptoms were mental. The unexpected often happens in cases of brain tumor.

DR. CHANNING concluded that the coincidence of symptoms were quite remarkable in the case reported.

#### THE ECTAL RELATIONS OF THE RIGHT AND LEFT PARIETAL AND PAROCCIPITAL FISSURES.

This was the title of a paper by DR. BURT G. WILDER, of Ithaca.

The parietal and paroccipital fissures may be either completely separated by an isthmus, or apparently continuous. When so continuous ectally there may still be an ental and concealed vadam or shallow. Disregarding the vadam on the present occasion, the ectal relations of the two fissures may be designated as either continuity or separation. That continuity occurs more frequently on the left side has been noted by Ecker, Cunningham and the writer. Hitherto, however, statistics have included unmated hemispheres as well as mates from the same individuals. The following statement is based upon the cerebrums of 58 adults of both sexes and various nationalities and characters. The speaker has examined 48; the other 10 have been accurately recorded by Bischoff, Dana, Jansen and Mills. So far as these 58 individuals are concerned, the most common combination, namely, left continuity and right separation is decidedly the rule with the moral and educated, less frequent with the ignorant and unknown, the insane and negroes, and does not occur at all in the murderers. The only instance of the reverse combination (left separation and right continuity) is an insane Swiss woman. The only two known to be left-handed represented the more frequent combination of left continuity and right separation. These statistics suggest many special queries and problems, some of which were briefly indicated. But the speaker wished this to be regarded as a preliminary communication and asked the coöperation of other members in the effort to obtain satisfactory results of larger numbers, particularly of brains of well-born, moral and educated persons. For this purpose a blank form was outlined.

#### DOES ANTISYPHILITIC TREATMENT PREVENT THE OCCURRENCE OF THE DISEASES OF THE NERVOUS SYSTEM WHICH ARE CONSIDERED SYPHILITIC IN ORIGIN?

DR. JOSEPH COLLINS, of New York, read this paper, and pointed out that certain diseases of the nervous system occur sequentially to syphilis with such frequency that they are rightfully looked upon as syphilitic in their origin. These diseases are tabes, general paralysis, syphilitic spinal paralysis and such exudative conditions as cerebral thrombosis. After briefly reporting the history and treatment in nearly 100 cases observed in the hospital, dispensary and private practice, the writer concluded as follows:

(1) Exudative and degenerative diseases due to syphilis are most liable to show themselves at the end of the third and beginning of the fourth decade of life.

(2) Thorough and prolonged administration of antisyphilitic remedies during the activity of the virus, does not seem to materially prolong this time limit.

(3) That active and prolonged antisyphilitic treatment does seem to prevent the development of such diseases as locomotor ataxia and general paresis.

This is true of degenerative diseases, though treatment may, however, have some effect in preventing the exudative diseases of the nervous system, such as syphilis of the spinal cord, disease of the blood-vessels, etc.

(4) Cases of tabes and general paresis in which syphilis is confessed, and in which treatment has been most desultory and incomplete, are not more liable to the early development or to the severe manifestations of either of these two diseases than those in which the treatment has been all it should be.

(5) That the administration of antisyphilitic measures in the most approved way does not fulfil the requirements of cure, and that syphilis is often an incurable disease.

DR. PUTNAM referred to a case that had received prolonged and thorough antisyphilitic treatment, yet symptoms of degenerative nervous disease appeared later in life.

DR. GRAY said that the facts in Dr. Collins's paper were not detailed as to the symptoms of syphilis, nor as to the exact treatment. In many instances of suspected syphilis an absolutely positive diagnosis is at times almost impossible.

DR. SACHS, on the whole, agreed with the conclusions of the reader of the paper. In the vast majority of cases, however, the treatment of syphilis does not prevent the development of tabes or general paresis.

A better way to have arranged statistics would have been to take all cases of syphilis and ascertain if they developed nervous disease later in life. The worst cases of syphilis of the nervous system occurred in those that have never received any treatment. He spoke of such a person who had developed pronounced general paresis one year after the initial infection. In late cases it is often difficult to prove the relationship between syphilis and the nerve lesion. We should be careful, he thought, about adopting Dr. Collins's views.

DR. P. C. KNAPP, of Boston, agreed with Dr. Sachs, and did not believe it wise to refuse antisyphilitic treatment where it seemed to be indicated. He asked Dr. Collins if his cases showed that the development of nervous disease bore any relation to the severity or character of the primary or secondary manifestations of syphilis. Where the cutaneous symptoms were pronounced there was usually less nervous disturbance.

DR. OSLER said that his experience was diametrically opposed to the views of Dr. Collins. The majority of severe cases of nervous disease occurring in syphilitics were in those who had either been badly treated or not treated at all. Early, thorough, systematic and prolonged treatment will prevent the development of degenerative disease of the nervous system in later life.

DR. N. E. BRILL, of New York, asked how the reader could reconcile with his statistics the fact that antisyphilitic treatment frequently cures incipient tabes and parietic dementia.

DR. DILLER had seen nervous disease develop in spite of early antisyphilitic treatment.

DR. PRESTON expressed the opinion that the irregularity with which endarteritis occurred is often overlooked. He was unable yet to establish the relationship between antisyphilitic treatment and endarteritis. Nervous disease has been of a milder type in those

who have received careful early treatment, and more marked in those who have not.

DR. PATRICK said that the author's statistics did not prove that treatment was ineffectual, and that the nervous diseases might be due to other causes. Where vigorous treatment is carried out for a brief period and then discontinued, late syphilitic disease of the nervous system is more likely to develop.

The PRESIDENT maintained that it was hardly fair to draw conclusions from two diseases such as tabes and general paresis, as the reader acknowledged that they were not always due to syphilis. The degenerative affections may occur in cases that have been thoroughly treated.

DR. COLLINS, in closing the discussion, said that he wished it understood that he had no theories to advance, but had merely tabulated the results of these cases. Particular inquiry had been made in the cases detailed, as to the kind of treatment, and in many instances satisfactory knowledge had been obtained. In cases which had been referred to by one of the speakers, in which the symptoms of tabes and general paresis disappeared under antisymphilitic treatment, he was not willing to concede that these were genuine cases of tabes or general paresis, but cases of pseudo-tabes and pseudo-paresis, in which the lesion was an exudative one and not a degenerative one, such as is characteristic of these two diseases; and it was his belief that in these cases antisymphilitic treatment was of benefit.

He had purposely refrained from saying anything of gummata, and had confined himself to the systematic syphilitic diseases of the nervous system.

#### PROGNOSIS AND DURATION OF ATTACKS OF MENTAL DISEASE.

This was the title of a paper by DR. HENRY R. STEDMAN, of Boston.

DR. CHANNING called attention to the fact that a general misunderstanding occurs in the community as to the curability of insanity. It is much more curable than is supposed. General paresis should not be classified among the insanities. The character of the disease has changed in the last fifty years, and our views and classification have therefore changed.

DR. GRAY said that to speak of insanity as an entity was as if one were to speak of all disease as an entity, and then go back to the old Carlyle tables of mortality for the prognosis of coryza, pneumonia, tuberculosis, typhoid fever and cholera, whilst to refer to the old statistics of Pliny Earle was like referring to the hospital results of thirty or forty years ago, for guidance in the treatment of the present day. If we are to accept the statistics of results of the insane asylums, we are justified in analyzing their record, and then we are startled to find that no new type of mental disease, no original pathological observation, no new departure in treatment and not one text-book has ever come from an American asylum, despite the millions of dollars and thousands of patients they have had at their command.

#### PARAPLEGIA FROM HEMORRHAGE INTO THE SPINAL CORD DUE TO PERNICIOUS ANEMIA: AUTOPSY.

DR. C. E. RIGGS, of St. Paul, read the report of a case, and presented a series of spinal-cord sections.

The paper was discussed by DRS. PATRICK, OSLER and PUTNAM.

#### SECOND DAY.

#### THE DORSAL SACK, THE AULIX AND THE DIENCEPHALIC FLEXURE.

A paper on this subject was read by DR. BURT G. WILDER, of Ithaca. It was illustrated by specimens and photographs.

#### PROGRESSIVE MUSCULAR ATROPHY OF SUDDEN ONSET.

This was the title of a paper by DR. THEODORE DILLER, of Pittsburgh. He related the details of a case which came under his observation three years ago, and stated that the sudden onset of palsy followed by atrophy and the absence of sensory phenomena led him to diagnose the case as one of poliomyelitis adultorum. The beginning of the patient's trouble was in an ophthalmoplegia. After an absence of two years the man again came under his care, when the atrophy and loss of power in the muscles had markedly increased. The biceps, triceps, scapular and ulnar groups had become involved, and the finer movements of the fingers were lost, as was also the power of supination. At this time the patient was unable to adjust or remove his clothing unaided. There was a marked decrease in the response both to galvanism and faradism in the paralyzed muscles. Dr. Diller considered that the case could be fairly regarded as one of progressive muscular atrophy, as the progressive feature was for two years the most important feature of the case. Ophthalmoplegia as a symptom of progressive muscular atrophy must be rare, for but scant references are made to it in literature. Strychnine had a very marked effect in staying the progress of the disease.

#### A CASE OF SYRINGOMYELIA, LIMITED TO ONE POSTERIOR HORN IN THE CERVICAL REGION, WITH ARTHROPATHY OF THE SHOULDER-JOINT AND ASCENDING DEGENERATION IN THE PYRAMIDAL TRACTS.

This was a paper by DR. F. X. DERGUM and DR. WM. G. SPILLER, of Philadelphia.

Three years after a strain of the back the patient began to suffer from pains in the legs, a band-like pain about the lower part of the chest, weakness in the lower limbs and a spastic gait. Complete paraplegia with contractures, more marked on the right side, wasting of the lower limbs, paralysis of the bladder and rectum developed later. Cutaneous sensibility was lost in the legs and upon the trunk as high as the nipple on the right side and a little above the umbilicus on the left. The sense of temperature was absolutely lost over the right arm, the right shoulder and the right side of the neck and also upon the adjacent part of the right side of the trunk above the nipple line. There was some analgesia of the right arm. The right shoulder-joint began to swell and from rupture of the capsular ligament cellulitis with redness and local heat was produced, but with little or no pain. In extension the humerus assumed the position of a subglenoid luxation. Death was due to exhaustion.

At the autopsy the capsule of the right shoulder-joint was found much thickened and roughened on the inner surface. The head of the humerus had disappeared, the bone having been eroded to some little distance below the surgical neck. A cystic tumor was found in the axilla containing a friable fatty material. The surface of the glenoid cavity was much eroded,

roughened and porous, it was abnormally large and extensive bony deposit had taken place along its edges. The coracoid process exhibited a thick and firm accretion around its entire edge.

Sections were made from the level of nearly every spinal root and from many spinal ganglia.

By the microscopic examination degeneration was found of the crossed pyramidal tract as high as the substantia reticularis of the second cervical segment and of the direct pyramidal as high as the motor decussation upon the right side, and for a short distance of the crossed pyramidal upon the left. This was believed to be ascending on account of the following facts:

(1) Absence of any microscopic lesion above the medulla oblongata.

(2) Degeneration of the crossed and direct pyramidal tracts on the *same* side of the cervical cord, intense in the lower cervical region near the lesion and diminishing gradually in intensity in the cervical segments, and finally becoming very indistinct in the upper cervical region.

(3) Absence of all degeneration in the anterior pyramids.

(4) Long duration of a chronic process.

While certain associative fibres may be considered degenerated in these columns, the entire antero-lateral column contains such fibres, and the degeneration was notably in the area occupied by the crossed and the direct pyramidal tract. This ascending sclerosis was probably in greater part due to destruction of motor fibres deprived of their function.

Degeneration of the direct cerebellar tracts and of the tracts of Gowers was traced as far as the inferior peduncles of the cerebellum.

Intense pachymeningitis was noticed from the second lumbar segment to the exit of the third dorsal roots.

The arthropathy of the right shoulder was not due to any special changes in the cord or spinal ganglia.

The posterior roots were not affected even where the pachymeningitis was most intense, the anterior roots at one part of the dorsal cord were degenerated.

In the entire cervical region as high as the second cervical segment the cavity was limited to the right posterior horn.

The gliosis extended from the extreme end of the conus terminalis to the second cervical segment. The microscopic examination explained satisfactorily the symptoms observed in life.

DR. HENRY S. UPSON, of Cleveland, stated that the degeneration in the lateral columns was explicable in two ways, the short fibres might be affected successively by the lesion, or that the degeneration might be in consequence of the syringomyelia or coincident with it.

DR. JAMES H. LLOYD, of Philadelphia, said that the paper proved that we can to-day make a localizing diagnosis of syringomyelia. This was the sixth case that had been correctly diagnosed at the Blockley Hospital. He thought the diagnosis was a very easy matter.

DR. SACHS endorsed what the previous speaker had said as to the diagnosis. As to the sensory symptoms we must not draw the line too close. There is frequent variability in the sensory symptoms during the course of the disease.

DR. KNAPP mentioned a case that had been under his observation, where the diminution of tactile sensi-

bility was marked, although in the earlier period of the disease it had been very slight.

DR. M. A. STAER, of New York, claimed that the first case correctly diagnosed in New York was at his clinic. He did not think this disease a rare one. He had seen three cases lately in which the dissociation of sensation was well-marked and accompanied by trophic symptoms. He also referred to its coincident association with acromegaly. Sometimes there is considerable difficulty in making the diagnosis. He mentioned a case in which it was difficult to determine whether it was hysteria or syringomyelia. There was preservation of tactile sense and hemianesthesia limited to pain and temperature senses.

DR. PUTNAM, referred to a patient he had observed for many years, in whom there was constant and severe pains in the back leading to the suspicion of a tumor. He was operated upon and his condition improved. He thought the diagnosis was extremely difficult in children.

DR. PATRICK was pleased to hear attention called to the coexistence of pachymeningitis. He had seen a case where both lesions coexisted.

The discussion was continued by DRS. GRAY, MILLS and HINSDALE and closed by DR. SPILLER.

DR. J. J. PUTNAM, of Boston, exhibited microscopic sections from a case of tabes, showing the characteristic degeneration.

#### PITTING ABOUT THE HAIR-CUPS A TROPHIC CHANGE IN THE SKIN IN CERTAIN NERVOUS DISORDERS OF CENTRAL ORIGIN.

DR. WILLIAM BROWNING, of Brooklyn, described a presumably hitherto unrecognized alteration in the skin. From some seven or eight years' observation of such cases he was able to give the limits of its occurrence. So far it has been seen only in progressive muscular atrophy of spinal origin, or in cases complicated with atrophy evidently likewise due to chronic precornal disease. In other troubles attended by atrophy, as infantile palsy, neuritis, pseudo-hypertrophy, etc., it has not been found. It is hoped that it may prove a useful help in differential diagnosis, especially between the forms due to peripheral and central disease. The change consists of an areola-like faint depression, frequently oval, in the direction of the lines in the skin, though it may be irregular or circular in form, about the exit of each hair. Usually the depression is a trifle paler than the surrounding skin, resembling but not really being, a minute scar. It is not observed in specially hairy regions like the scalp, but only over the seat of muscular atrophy, notably on the leg and thigh, though also on the upper extremities. All these patients had reached or passed middle life. A drawing to show the appearance in one case was exhibited.

Discussed by DR. W. OSLER and DR. F. W. LANGDON.

#### RAPIDLY FATAL CEREBRITIS RESEMBLING CEREBRO-SPINAL MENINGITIS.

This was a joint paper by DR. JAMES HENDRIC LLOYD and DR. JOSEPH SAILER, of Philadelphia.

The writers called attention to the fact that fulminating cases of the infectious diseases such as small-pox, scarlatina, measles, typhoid fever and spotted fever occur in which the diagnosis is exceedingly obscure and the disease is usually quickly fatal. These cases

as a rule have their most marked symptoms in the nervous system. There is delirium passing into coma with depressed cardiac and respiratory centres, with high fever, and in the cases of the exanthema often a purpuric or hemorrhagic eruption not always characteristic. These cases demand especially two things, first, the determination of the exact effects upon the nervous system, and second, the determination of the microbe or toxic agent at work in any given case. The writers could only attempt the former study as the paper was not intended to deal with the bacteriology of the subject.

The patient was a man, aged twenty-four years, who was taken suddenly with a chill followed by fever and intense cephalalgia and radialgia. The patient passed rapidly into a condition of delirium merging into coma. Third nerve paralysis supervened, and on the third day a copious purpuric eruption appeared. This eruption presented ecchymosis and on the hands lesions like erythema nodosum. Blood and pus were found in the urine and vomiting of blood occurred before death. The patient died on the sixth day. The autopsy revealed disseminated local lesions in the cerebrum, mid-brain, pons and post-oblongata. Some migrated leucocytes in the perivascular spaces, little involvement of the membrane and a diffused nephritis. From extensive microscopic research the writers were able to report a disseminated local cerebritis. The infection had invaded the brain by way of the connective-tissue structures, blood-vessels, etc., and the nerve tissues proper were invaded secondarily. From the clinical standpoint the case probably comes under the head of "spotted fever."

DR. OSLER said he should like to have heard more in regard to the condition of the kidneys in the case reported. The diagnosis of cerebritis and encephalitis can be readily made between cases of infectious fever and the former. Unless the basal meninges are involved we cannot make a positive diagnosis of meningitis, as all these symptoms, such as retraction of the head and clonic contractions of the muscles, may be present in pneumonia and yet nothing is found at the autopsy.

DR. PUTNAM agreed with the previous speaker that so-called meningeal symptoms may occur without meningitis.

The discussion was closed by DR. LLOYD.

#### NEUROPATHIC DERMATITIS.

DR. L. A. DUHRING, of Philadelphia, presented this patient who had been under his observation for six years.

#### THE EFFECTS OF THE FLUID EXTRACT OF ANHELONIUM LEWINII (THE MESCAL BUTTON).

This was the title of a paper by DR. S. WEIR MITCHELL, and read by DR. WHARTON SINKLER, of Philadelphia.

It was a graphic description of the personal experience of Dr. Mitchell as to the exhilarating effects, and the production of various visual hallucinations, etc., after the ingestion of a certain quantity of the drug.

#### UNCERTAINTIES OF CEREBRAL LOCALIZATION.

A paper with this title was read by DR. WHARTON SINKLER, of Philadelphia.

(To be continued.)

## Recent Literature.

*Twentieth Century Practice.* An International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In twenty volumes. Volume VIII, "Diseases of the Digestive Organs." New York: William Wood & Co. 1896.

Owing to unforeseen difficulties in the preparation of Volume VII, it has been found necessary to issue Volume VIII in its place; Volume VII will follow. This volume is devoted to the diseases of the digestive organs. The title as it stands is not a correct indication of the contents and scope of the volume; it embraces at once too much and too little. There are sections on Diseases of the Mouth, of the Esophagus, of the Stomach, of the Pancreas, and one then passes to a section on Diseases of the Peritoneum, to a section on Animal Parasites and the Diseases caused by Them, and finally to one on the Treatment of the Diseases caused by Animal Parasites.

This volume contains 667 pages, including the index; it has about 100 illustrations of various degrees of merit. There are eight contributors of the seven sections: the first section, on Diseases of the Mouth, being the joint production of Messrs. Mikulicz and Kümmel of Breslau. Dr. R. H. Fitz, of Boston, contributes the chapter on Diseases of the Esophagus; Dr. Max Einhorn, of New York, that on Diseases of the Stomach; Dr. H. Leo, of Bonn, the short chapter on Diseases of the Pancreas; Dr. B. Farquhar Curtis, of New York, the chapter on Diseases of the Peritoneum, which includes Appendicitis; Dr. Huber, of Memmingen, Bavaria, the chapter on Animal Parasites; Dr. James M. French, of Cincinnati, the final chapter on the Treatment of the Diseases caused by Animal Parasites.

Dr. Einhorn's article on Diseases of the Stomach takes up more than a third of the whole volume. The subject, to which the author has devoted much personal attention in study and in practice, is very thoroughly covered, and brought down to date. His own methods of investigation and treatment are incorporated with a full statement of the progress made in this important department in Germany, especially, and in France during the last ten or fifteen years.

*Practical Diagnosis: The Use of Symptoms in the Diagnosis of Disease.* By HOBART AMORY HARE, M.D., B.Sc., etc. Illustrated with 191 engravings and 13 colored plates. Philadelphia and New York: Lea Brothers & Co. 1896.

This octavo of 578 pages is divided into two parts. Part I discusses, in thirteen chapters, The Manifestation of Disease in Organs; Part II, in nine chapters, The Manifestation of Disease by Symptoms. Part I is practically a regional diagnosis. In Part II diagnosis is sought through symptomatology.

It will be readily seen that the plan upon which the book is written is quite different from that of the usual Theory and Practice of Medicine. Of such a book the index is a very essential part. Two very good ones are furnished: one, an index of diseases; the other, an index of symptoms, organs and terms.

This volume is intended as an aid to the same author's "Text-Book of Practical Therapeutics."

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THE DEATH OF SIR JOHN ERICHSEN.

SIR JOHN ERIC ERICHSEN, who died September 28d, was one of the foremost representatives of British surgery. As his name implies, he was of Danish descent. He was born in 1818, and studied medicine at University College Hospital, where he was the pupil of Liston. By a combination of circumstances through which rapid promotion was facilitated, he was appointed professor in University College at the age of thirty-two. He became famous as a clinical teacher, and among his pupils were Sir Joseph Lister, Sir Henry Thompson and Marcus Beck. In 1866, on the resignation of Richard Quain, he became professor of clinical surgery in University College, and this position he held till 1875.

At the time of his death he was emeritus professor of surgery and consulting surgeon to University Hospital, and to many other medical charities. He had been president of the Royal College of Surgeons of England, of the Royal Medical and Chirurgical Society, and of the Surgical Section of the International Medical Congress of 1881. He was appointed secretary to the Physiological Section of the British Association for the Advancement of Science in 1844; was member of the Royal Commission on Vivisection in 1875; was surgeon extraordinary to the queen, and had been president of University College, London, since 1887, succeeding the Earl of Kimberley.

He was the author of monographs in various surgical dictionaries on numerous subjects in surgery and in particular on Aneurism, on which he was an authority.

In 1853 the first edition of his great work, "The Science and Art of Surgery," was published in one volume, containing 950 pages and about 250 illustrations. Three subsequent editions in one volume were issued. In the fifth edition, published in 1879, it developed into two volumes, in which form it has run through five further editions, the tenth having appeared in 1895. It was translated into German, Italian, Spanish, and even into Chinese. No text-book of surgery has had so extensive a circulation, and there is probably

no man whose teachings have had so wide an influence on students of surgery throughout the world. In fact, it was for many years, perhaps, the only widely recognized text-book of surgery in English. The various editions of this book covered the period of the growth and development of antiseptics and asepsis in surgery down even to the present time, and considering the multiplicity of text-books which are now provided for the student it is remarkable that for so long it held the field unchallenged. During the War of the Rebellion the United States Government issued a copy of the American edition to every medical officer in the Federal Army, without the consent of the author or without acknowledgment either to him or his publishers, a proceeding which the present copyright laws render impossible.

His work on "Railway Injuries of the Nervous System" has had much to do with the development of our present knowledge of this subject, and has figured prominently in many law suits against railway companies. His views on the subject have not, however, altogether stood the test of time.

The brilliancy of his operations was somewhat marred by defective eyesight, but his operating was safe and conservative, and experience and sound judgment rendered his opinion of the highest value in difficult cases. In consultation he was sought by patients from all over the world, and nowhere does the consultant gather such a vast and varied experience as in London. His distinguished career goes to prove that qualities far higher and finer than those which characterize a mere brilliant operator are essential to the truly great surgeon.

As a man he was honorable and generous, both in professional and private life.

The close of so long and distinguished a surgical career, brings vividly before the mind the progress which the "Science and Art of Surgery," to employ the title of his own great work, have made during the life of this distinguished man. He was in active surgical practice for several years before the introduction of anesthesia—the semi-centennial of which we are so soon to celebrate—robbed surgery of its pain, and widened its field of beneficence to an extent at that time inconceivable. He remained as almost the only living surgeon who could tell us of to-day, and from his own experience, of the time when swiftness of work was the highest surgical skill, and when the surgeon, if he would operate successfully, must be deaf to the anguished cries of his victims.

Sir John Erichsen had promised to write and send for reading at the celebration of the Semi-centennial of Anesthesia, which will be held next week at the Massachusetts General Hospital in this city, some reminiscences of surgery before the days of anesthesia. If his fatal illness had been postponed only a few days longer, this gap, which nothing but his experience could fill, would not have been left in the exercises of commemoration. The closeness of the dates of his death and of the anniversary serves to accentuate this irretrievable loss.



## TRANSFORMATION OF THE PERSONALITY IN THE COURSE OF SENILE DEMENTIA.

At the recent French Congress of Alienists, Physicians and Neurologists, Parisot described a special form of delirium affecting certain senile demented, originating and developing under the influence of suggestion, spontaneous or provoked, but not a part of any hypnotic state. He had in his service an old man, aged seventy-six years, affected with simple senile dementia. From time to time this man, who is habitually free from delirium, makes use of expressions or assumes an attitude quite at variance with his usual utterance and attitude. One day, for instance, he believes himself a soldier, the asylum to be barracks, his chamber the infirmary, etc. Another day he walks majestically, armed with a large broom-handle, with which he beats the ground at rhythmical intervals. When asked what he is doing, he replies, "Conducting the bride to the sacristy." And all his other answers are in accord with this supposed office. These delirious states are very fugacious, lasting only several minutes. Parisot at first believed that these states manifested themselves spontaneously, and were the product of cerebral automatism; he was afterwards convinced that they were the result of suggestion. It suffices, in fact, to give to this patient the attitude of a soldier bearing arms, to impress him with the notion that he is a military man; if he is invested with the paraphernalia of a church beadle, he proceeds to perform the functions of that office.

It is worthy of remark that this man had in former years been both a soldier and a beadle, and that the elements of the delirium which comes on in the course of senile dementia are always borrowed from former periods of life of the patients. It is probable that the muscular sense intervenes in the genesis of the delirium. Certain muscular sensations awaken in the demented old impressions which had left by their repetition or their intensity a profound trace in the nerve cell; and, thanks to the strongly coherent dynamic associations, bring back into clear light a state of anterior consciousness; so we find the actual psychical individual transformed into another much younger. Forgetful of the present, living in the past, he feels, he thinks, he acts with an old brain which now contains little but a residuum of souvenirs and images belonging to a period of life long since passed.

The senile demented is suggestible, but his field of suggestibility is limited because his cerebrum is not in condition to take in any new acquisitions. It has been found impossible to suggest to such demented the performance of any actions except such as they were familiar with by past experience, or to transform them into personages other than those of which they have formerly played the part. His mind can work only in the well-worn grooves which experience has channelled, and the suggestion serves as a switch to turn it into this groove or that. Too weak to choose for himself, he is simply swung according to the whim of the suggestor.

## MEDICAL NOTES.

**IRRIGATION OF THE PERICARDIAL SAC.** — Professor Verdelli, of Parma, recently opened the thoracic cavity, exposing the pericardium, which was given an antiseptic washing. The patient, who had been given up as lost, recovered. — *Medical News.*

**THE "CHARLOTTE MEDICAL JOURNAL."** — This excellent journal has recently increased the size of its pages, and made several other changes in the line of improvement, such as the adoption of double columns and increasing the total amount of reading matter.

**THE CONVALESCENT DINNER SOCIETY.** — The Convalescent Dinner Society is a London association which undertakes the duty of granting in well-authenticated cases, in which sickness has reduced the strength necessary to return to work, an order for fourteen daily dinners. Such orders have been granted to nearly one thousand convalescents during the last year. — *Chicago Medical Recorder.*

**A MEDICAL EPITAPH.** — Professor Pajot, who recently died in Paris, was noted for his caustic wit, which made him many enemies. Few of his epigrams were as harmless as his epitaph on Civiale, the famous lithotritist, which has been thus translated by a writer in the *London Daily Chronicle*:

"For Civiale who's dead and gone,  
Though sympathetic tears may gush,  
Set not upon his grave a stone,  
Which he would surely rise to crush."

**THE DANGERS OF AN IRISH DISPENSARY DOCTOR'S PRACTICE.** — A few days ago, says the *Medical Press*, Dr. O'Rourke, the recently appointed Medical Officer of the Ballyconnell Dispensary District, went to see a patient. When some distance from town he was attacked by a party of men who assaulted him and the car-driver, and took possession of the horse and car. Dr. O'Rourke was rendered unconscious from the effects of the beating.

**THE NEW MEDICAL COLLEGE BUILDING OF SYRACUSE UNIVERSITY.** — The new Medical College Building of Syracuse University was formally opened on Monday, October 5th. The opening exercises consisted of introductory remarks by the Chancellor of the University, Rev. James R. Day, S.T.D.; a response by the Dean of the College of Medicine, Henry D. Didama, M.D., LL.D.; an account of the history of the new building by Gaylord P. Clark, M.D., of the Faculty of the College of Medicine; an address by Dr. Stephen Smith, of New York.

**HYDROSTATIC EXPLORATION OF THE ABDOMEN.** — M. Marc Sée has recently communicated to the French Academy of Medicine an ingenious method for facilitating abdominal palpation. He claims that with the patient submerged in a bath, the anterior abdominal parietes, even in the corpulent, become flaccid, so as greatly to facilitate exploration. The relaxation is explicable on ordinary hydrostatic principles. The abdominal walls, loaded as they are with fatty matter, tend to float upwards towards the surface of the water, thus to a certain extent counteracting the elastic and

contractile forces which tend to keep them in close contact with the viscera.

**AN ANCIENT RUSSIAN SUPERSTITION.**—A fatal case arising out of the widespread superstition that a candle made from human fat bestows invisibility upon its possessor, is reported from Ostrogzhsk. Two Russian thieves of the district were so firmly persuaded of the truth of this that they murdered a youth of their village in order to procure the candles in question. Having cut open the body, they removed the fat surrounding the kidneys, and, placing it in a tin box, took it home. There they proceeded to melt the fat over the fire. Unluckily for them an old woman, their housekeeper, became suspicious and informed the authorities. Her statement, coupled with the mysterious disappearance of the youth, who was a handsome and popular young fellow of eighteen, led to the prompt arrest of the ruffians and their ultimate trial for murder. The body was discovered, and the portions lacking therefrom lent further confirmation to the crime. — *Journal of the American Medical Association.*

**THE YOUNGEST VICTIMS.**—Four years is an early age for a boy to acquire gonorrhea, and from "the regular source"; but this is the age of the younger of two patients treated by Dr. Lucien Lofton, of Atlanta, Ga., and reported by him in the *New York Medical Journal*, October 8d. The older patient was aged five. The finding of Neisser's gonococci in the discharge confirmed the diagnosis. The mothers of the children, who were colored boys, were found to be free from gonorrheal disease, and the source of the trouble could not be definitely ascertained. Gonorrheal vulvitis in little girls is not so very infrequent, and its existence does not presuppose attempts at rape or sexual intercourse, as it is believed to be often due to the child's handling the vulva with hands accidentally contaminated by contact with the infected clothing of other members of the family, etc. In these cases of urethritis in the male, however, such an origin would, as Dr. Lofton implies, be more improbable, and in the absence of evidence attempts at sexual intercourse are more apt to be the cause.

**AMBULANCES FOR DRUNKARDS.**—A pleasing suggestion for the care of drunkards is that which the Salvation Army propose to put in practice in London. According to the *British Medical Journal*, ambulances, painted white and red, are to be driven by one girl, accompanied by two others, who are to be entrusted with the conveyance of the drunken to a "Salvation shelter." Whether this "kidnapping" will be allowed by a government the head of which has publicly objected to the compulsory curative cure of habitual drunkards as an infringement of personal liberty, remains to be seen; as also whether (considering a recent trial) the status and condition of the shelters in question are suitable. The good-natured drunkards would probably not object to being conveyed to a quiet sobering-off place by the Salvation lassies, but it would seem probable that those of the quarrelsome

variety would require the attention of the more stalwart soldiers of the army. This would force the army into a kind of self-constituted police force, performing functions which can only belong to the regular police, and would be manifestly illegal.

#### BOSTON AND NEW ENGLAND.

**SEMI-CENTENNIAL OF ANESTHESIA.**—We give below the programme of the Commemorative Exercises to be held on the 16th inst. at the Massachusetts General Hospital.

1. Address of Welcome, by Charles H. Dalton, Esq., President of the Massachusetts General Hospital.
2. "Reminiscences of 1846," by Dr. Robert T. Davis, of Fall River, and Dr. Washington Ayer, of San Francisco.
3. "Surgery before Anesthesia," by John Ashhurst, Jr., M.D., of Philadelphia.
4. "What Anesthesia has Done for Surgery," by David W. Cheever, M.D., of Boston.
5. "The Birth and Death of Pain." A Poem by S. Weir Mitchell, M.D., of Philadelphia.
6. "Relation of Anesthesia and Obstetrics," by John P. Reynolds, M.D., of Boston.
7. "The Influence of Anesthesia upon Medical Science," by W. H. Welch, M.D., of Baltimore.
8. "The Surgery of the Future," by Charles McBurney, M.D., of New York.

The following gentlemen will serve as an Honorary Committee.:

John Shaw Billings, M.D., LL.D., *Chairman*, New York.  
 Charles W. Elliot, LL.D., President of Harvard University.  
 Henry P. Walcott, M.D., President Mass. Medical Society.  
 Morrill Wyman, M.D., LL.D., Cambridge.  
 Claudius Henry Mastin, M.D., LL.D., Mobile.  
 Robert F. Weir, M.D., New York.  
 Hunter McGuire, M.D., LL.D., Richmond.  
 William Williams Keen, A.M., M.D., LL.D., Philadelphia.  
 Horatio C. Wood, M.D., LL.D., Philadelphia.  
 William Pepper, M.D., LL.D., Philadelphia.  
 Henry H. Mudd, M.D., St. Louis.  
 Louis McLane Tiffany, A.M. (Cantab), M.D., Baltimore.  
 Nicholas Senn, M.D., Ph.D., LL.D., Chicago.  
 Charles McBurney, M.D., New York.  
 Nathaniel Pendleton Dandridge, M.D., Cincinnati.  
 Francis John Shepherd, M.D., Montreal.  
 J. William White, M.D., Ph.D., Philadelphia.  
 William Osler, M.D., Baltimore.  
 William J. Morton, M.D., New York.  
 Frederic Shepard Dennis, M.D., New York.  
 William S. Halsted, M.D., Baltimore.  
 Roswell Park, A.M., M.D., Buffalo.  
 Levi C. Lane, M.D., LL.D., San Francisco.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—For the week ending at noon, October 7, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 123, scarlet fever 11, measles 17, typhoid fever 42.

**OPENING OF THE WOMEN'S CHARITY CLUB HOSPITAL.**—The Women's Charity Club Hospital on Parker Hill, Boston, which was closed during the summer, was opened this week for the season.

**A CADET FROM THE "ENTERPRISE" DIES FROM DIPHTHERIA.**—W. J. Clare, of Quincy, one of the four cadets from the nautical training-ship *Enterprise*, who were taken to the Boston City Hospital suffering from diphtheria, on the arrival of the ship at Boston last week, died of the disease a few days later. The others are recovering.

## NEW YORK.

**A NEW GOUVERNEUR HOSPITAL.** — At a meeting of the Sinking Fund Commissioners held October 1st, it was decided to erect at once, at an expense of \$200,000, a new building to take the place of the present Gouverneur Hospital, on the lower East Side. The old hospital building, which will be allowed to remain until the new structure has been completed, has long been inadequate to meet the demands of that portion of the city.

**TO REGULATE THE EMPLOYMENT OF CHILDREN.** — A new law, known as the Mercantile Establishment Law, which will in a measure revolutionize the employment of children, went into effect in the State of New York on September 29th. According to the provisions of this law it is made a misdemeanor for any proprietor or person connected with a manufacturing establishment to employ any child under the age of sixteen years unless there is first provided and placed on file in the office of the person or firm so employing such child a certificate of the local board of health, setting forth the fact that the parents of the child are willing to have it go to work; that it has a fair education; and that it is physically able to perform the work intended for it.

**A RECOVERY FROM TETANUS UNDER ANTITOXIN.** — A case of recovery from tetanus under the use of tetanus antitoxin is reported from Brooklyn. The disease resulted from a scalp-wound which the patient received while at work in a stable. He was treated at his own home and the antitoxin employed was obtained from the Pasteur Institute in New York. As in this instance the remedy was applied at a comparatively early stage of the disease, before the patient was exhausted, and as a fairly long interval of time has now elapsed since the attack was controlled, there would seem to be ground for regarding the cure as a permanent one. In speaking of the case, Dr. Chick, one of the physicians in attendance, remarked: "I consider this case a very important one because of the danger there is from tetanus germs in the soil of Long Island. During the past four years it has been proved that these germs are present to an alarming extent."

**SECONDARY POISONING BY CORROSIVE SUBLIMATE.** — A somewhat curious case of secondary poisoning by bichloride of mercury has recently been attended by Dr. Pedro J. Salicrup. The patient, who was a young girl, sixteen years of age, belonging to a Cuban family, out of *pique*, apparently because she considered herself harshly treated by her parents in an affair of trifling moment, swallowed a considerable portion of the contents of a bottle labelled "poison," containing a solution of corrosive sublimate, which she found about the house. As soon as the effects of the bichloride began to be felt she became thoroughly alarmed and confessed what she had done. Dr. Salicrup, who was hastily sent for, washed out the girl's stomach and administered appropriate antidotes, and the next day she was apparently entirely out of

danger. After a day or two's indisposition she seemed to have completely recovered her health, but at the end of a fortnight she was suddenly taken violently ill. She was again promptly attended by Dr. Salicrup, who called in consultation Professor Tamayo, of the University of Havana, who was temporarily in the city, but all efforts to save her were unavailing, and she died within four days, after great suffering. Under the circumstances, it was deemed best to notify the coroner's office, and after due investigation, the cause of death was pronounced to be bichloride of mercury poisoning.

**DEATH OF DR. MILNE.** — Dr. Charles Milne, a well-known New York practitioner, died suddenly of cardiac disease on September 28th. He was fifty-six years of age, and a graduate of the Medical Department of the University of the City of New York in the year 1873.

**DEATH OF DR. BERNACKI.** — Dr. Charles Bernacki, who had been medical director of the Germania Life Insurance Company of New York since 1864, died at Schandau, a watering-place in Saxony, on September 17th, at the age of eighty-four. He was born at Starasol, Galicia, November 3, 1812, and was graduated from the University of Vienna, where he enjoyed specially intimate relations with Professor Karl Rokitansky, in 1839.

**DEATH AT THE AGE OF ONE HUNDRED AND TWO YEARS.** — It is not often that a person in the higher classes of society attains the age of a hundred years. On September 30th, however, there died, in Brooklyn, a lady of birth and refinement, Mrs. Helen Hegeman Dean, aged one hundred and two years, eight months, and six days. She was born in New Utrecht, Long Island, in 1794, and at the age of twenty-two married Major William R. Dean, of Brooklyn, who died about forty years ago. Until very recently she is said to have enjoyed excellent health and the possession of all her faculties to a remarkable degree.

### Miscellany.

#### THE DANGERS OF LIFE IN BOSTON AS VIEWED BY A WESTERNER.

A STRANGER from Minneapolis who arrived in Boston a few afternoons ago, took a room at the Parker House and after a comfortable dinner went out in the evening to see the city. He started up Tremont Street, under the wooden bridge at the West End Railway terminus, but only got as far as Park Street, when his way was blocked on Tremont Street by an interminable line of cars, and on Park Street by a jumble of dirt-carts and subway apparatus. Despairing of further progress in that direction, he made his way back to the King's Chapel Burying-ground, where he noticed that the street was thrown into irregular waves covered with planking, and giving a hollow sound as the horses' feet traversed them. Though somewhat alarmed at this strange phenomenon, he pursued his course along nearly to Scollay Square, when he perceived an

unearthly glare coming up through the cracks in the planking, and in particular through a square opening close to the sidewalk, surrounded by a low wooden fence. He gave one look through the hole, and saw at the bottom of a great cave which was hollowed out under the street what looked like a lot of demons shovelling coal into the furnaces of Hades. He fled in terror back to the Parker House, and rushed up to his room. From his window he looked out on Tremont Street, and down into just such another demon-haunted cavern as he had fled from a few moments ago. After recovering with difficulty from the nervous shock, he went to the hotel clerk, and explained to him the imminent danger which threatened the lives of all the inmates if the walls of Hades, upon the very brink of which the hotel was standing, should cave in. He had never heard of the subway!

It happened that while on the way to the city this same Westerner happened to notice a paragraph in a daily paper, stating that a delegate to a political convention in Music Hall was killed by electricity while climbing down the Music Hall Building at 3 A. M., in search of food. As he knew nothing about the circumstances which preceded this predicament, it was perfectly natural for him to anticipate danger in a city where the barbaric methods of siege and starvation were ordinary political expedients, and it was perhaps not unnatural for him to conclude that so wicked a city must lie in close proximity to the infernal regions!

#### A MEDICO-LEGIST ON SUICIDE.<sup>1</sup>

"SUICIDE by hanging," said Professor Brouardel in the course of a recent lecture, "would seem to have been invented on purpose for dipsomaniacs, children, and, generally speaking, all persons whose intellects are weak or undeveloped. The simplicity of the process accounts for its popularity. In some families self-murder by hanging would seem to be an hereditary failing. Not far from Etampes there is a large farm with which I am acquainted. One day, without any apparent cause the proprietor hung himself, leaving a family of seven sons and four daughters. Ten out of the eleven subsequently followed their father's example, but not until they had married and begotten children, who in their turn all likewise put an end to themselves with the cord. There is now but one representative left of this remarkable group, an old man of sixty-eight who has passed the family hanging age. When an alcoholic subject is attacked by an acute paroxysm of his disorder the spontaneity of his ideas is only equalled by the rapidity with which he gives effect to them. He never pauses an instant for reflection. The idea of suicide or of some other crime surges up in his mind, and forthwith he acts upon it, often in the most ferocious manner, but without the slightest conception as to why he does so. Whenever a medico-legist has to do with a case of crime for which he can detect no motive, and in which the perpetrator seems to have committed the deed entirely without premeditation or discernment, he should bear alcoholism in mind."

In conclusion the professor related the following extraordinary incident: "While I was house surgeon at Saint-Antoine a man threw himself down from the summit of the Bastille Column, and not only escaped

with his life but was not even injured. They were re-gilding the ornamentation at the base of the column, and in order to protect the artists and their work from rain and dust a kind of canvas tent had been rigged up between the pedestal and surrounding railing. The would-be suicide had the good luck to fall on the tent and rebounded from it to the ground. Some bystanders, thinking he must be severely hurt if not killed outright, ran to his assistance, but before any one could reach him he scrambled to his feet, picked up his hat, and made off at a round pace. The man was a victim to alcoholism. I did not actually see him fall, but was present when the police arrested him. He said he was servant to a wine-seller, and they let him go free. Some days afterwards I was very much surprised to see the identical individual here at the medical faculty in the capacity of amphitheatre attendant. He remained with us sixteen years, and never again attempted to take his life. I cross-examined him very carefully, but he was quite unable to account for his act. When he ascended the column he had not the most remote intention of throwing himself down. The impulse to do so suddenly seemed to overmaster him completely, and without a moment's thought he yielded."

#### Correspondence.

##### MASSAGE RUN WILD: TOO MANY MANIPULATORS.

Boston, September 29, 1896.

MR. EDITOR:—There is a great tendency to overproduction of all kinds at present. Boston, with a population of nearly 500,000, has about 1,500 physicians of all sorts, or one doctor to every 333 inhabitants. One physician to each 1,000 of the population is usually considered quite enough; so that this community would probably not suffer for medical and surgical skill if it had only 500 physicians. For every ten medical patients it is estimated that there is one surgical patient, so that 50 surgeons would probably be a good supply for this city. As many physicians do surgical operations and many surgeons practise medicine, it is not easy to estimate how many surgeons may be necessary.

There is not more than one case requiring massage for every 100 medical, for every 10 surgical cases; so that five or six good masseurs and masseuses could easily do all the necessary scientific massage in a city of the size of Boston. There are, in reality, not more than this number of manipulators who get anything like steady employment in Boston. There are not less than 45 men who are trying to get into a massage practice, unduly increasing manipulators more than there is work for, means that they cannot become experienced and skilful; that when tried by such, massage will often be said to have failed in apparently suitable cases; and that after a period of waiting and anxiety, most of these "mashers" will seek other and steadier employments. This is a matter of every-day history. No one has ever applied to the writer for instruction in massage without being told that there are many more manipulators in Boston, New York, Philadelphia and Chicago than there is work for.

And still, what is being done to increase the number of aspirants to fame and fortune, in the path of rubbing? Many people who are out of a job take up rubbing and call it massage, without any training or study. Occasionally one of these by cheek, favor, friendship or "magnetism" succeeds in getting plenty to do; but nearly all of them soon find out their mistake.

There are so-called schools of massage that pose as philanthropical institutions to help the intelligent and industrious for a consideration; that is more valuable to the

<sup>1</sup> London Lancet.

teachers than the instruction is to the pupils. With rare exceptions these teachers not only need instruction themselves, but also reconstruction.

Somewhat better are the training-schools for nurses at our large hospitals, nearly all of which profess to teach massage to their nurses. To my certain knowledge the teachers of these nurses have almost invariably been selected before they had time and opportunity to show that they knew enough about massage to practise it themselves, to say nothing about their ability to teach it. The most thoughtful and intelligent of the nurses regard their attempted instruction in massage at the hospitals as a decided imposition, useless and impracticable; for their duties in attending the acutely ill and seriously injured are so arduous and fatiguing that they unfit them for receiving instruction in, and for practising massage, which requires people that are rested and vigorous to be of any use at all. For the same reason those who have the care of very sick private patients should be exempt from doing massage.

How comes it, then, that massage is attempted to be taught in the hospitals? Usually in compliance with the request of some one of the staff, whose brethren are indifferent about this matter, and who think it will do no harm to gratify a fanciful notion. Almost all the other hospitals think they must be in the fashion, and that they would be losing a means of grace or an attraction for patronage if they did not profess to teach massage also. The number of physicians or surgeons on or off the staff of a hospital, who pretend to know anything about massage, or who would condescend to try their hand at it if they did, are in a decided minority. One of them recently said to me that he did not believe there was more than one doctor in five hundred that knew anything at all about massage. And yet they expect nurses to be taught what they have neither time nor inclination for themselves. To the credit of the profession, however, be it said, that they daily do much dirtier work in the cause of science and for the sake of humanity. Oliver Wendell Holmes used to say that physicians often do work that no mental could be hired to perform.

While nurses and others who have not had a thorough medical education may, by training and practice and natural adaptabilities, become skilful in carrying out the wishes of physicians as to massage, yet a thorough knowledge of this art and the extent of its usefulness can only be acquired by much study and long experience; for it now reaches into certain well-defined conditions in every branch of medical science, and may prove beneficial or harmful according to the way in which it may be used, after the failure of other means.

Much more might be said on this subject; but if the golden rule be observed, medical etiquette will not be likely to suffer.

Very truly yours,

DOUGLAS GRAHAM, M. D.

### THE TRAINED NURSE: THE OTHER SIDE.

NEW YORK, October 4, 1896.

MR. EDITOR:—As a trained nurse myself and also an employer of trained nurses, I should like to say a few words in answer to the letter dated September 24th, and signed "A Down-trodden Friend of the Patient," which was published in your last issue.

I have also had experience with three trained nurses; but fortunately they were all good ones, anxious and willing to do all their share, and even more if the absence of servants, etc., made it necessary.

After having had the experience of a dozen cases outside the hospital, I have learned that though the nurse is often to blame for the "lacks" spoken of by our "Friend," there is as much criticism to be made on the other side of the question.

The friends, and often the family, of the patient make it almost impossible for the nurse to carry out the doctor's orders. They frequently think they know much more about

the case themselves, and are sure it would be better "if the poor sick thing could just see one of us, to cheer her up, you know," when the doctor's last words to the nurse were probably, "Now, nurse, no matter what, keep everybody out of the room."

The trained nurse is supposed to be always cheerful, and yet lose much sleep, eat at irregular hours, do without proper outing, etc., and then she is given a couch to rest on in the noisiest room in the house, perhaps, where she may be interrupted a dozen times during the time she may be trying to sleep. I have known several instances where even a lecture would have proved more restful than an hour passed in the room allotted to me for sleep.

There is much to be said, and I hope something to be done, about the matter; but our "Down-trodden Friend" ought to realize that the nurse is frequently more down-trodden, and also, perhaps—who knows?—our friend may have deserved all the down-troddenness, if I may use that word.

A MASSACHUSETTS GENERAL HOSPITAL GRADUATE.

### ANOTHER USE OF SKIAGRAPHY.

BOSTON, October 1, 1896.

MR. EDITOR:—In one of the late numbers of the JOURNAL you speak of the use of skiagraphy for the detection of the adulteration of food. I have recently used the instrument to distinguish between the powdered cholesterin of an undoubted gall-stone and a granular mass taken from the feces which was supposed to be of gall-stone origin. The patient, a woman of fifty-seven, in whom the diagnosis of gall-stones had been made by her physician, brought me some gravelly powder which she had found in the fecal discharges after an attack of pain. Compared in the light of the x-rays with some powdered gall-stones which I happened to have in my office, the difference was marked. The gall-stone cast a very faint shadow, the powder in question a distinct one.

The difference between these substances, as demonstrated by the Röntgen rays and the fluoreoscope, was sufficiently marked to justify the conclusion that the suspected powder was not cholesterin, and probably not of biliary origin.

To demonstrate these substances in the x-rays, two small envelopes were used, one containing what was known to be powdered gall-stones, and the other the substance taken from the feces. The envelopes were placed side by side between the Crookes tube and the fluoreoscope. The difference was immediately perceptible.


Chemical examination showed that the specimen was not from gall-stones.

Yours very truly,

M. H. RICHARDSON, M.D.

### METEOROLOGICAL RECORD

For the week ending September 26th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-	Thermom-			Relative		Direction		Velocity		We'th'r.		Rainfall in inches.	
	meter	eter.			humidity.		of wind.		of wind.		.			
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.		8.00 P. M.
S..20	29.96	59	66	52	66	59	62	N.W.	S.W.	18	9	C.	C.	.23
M..21	29.92	59	70	48	59	76	68	W.	S.W.	8	10	C.	O.	
T..22	29.81	57	64	50	86	83	84	S.W.	N.W.	15	10	C.	O.	.06
W..23	30.10	50	56	43	54	51	52	N.	N.W.	15	12	C.	O.	
T..24	30.21	52	64	40	58	61	60	W.	N.	10	4	C.	O.	
F..25	30.38	62	70	54	70	75	72	S.E.	S.	8	12	C.	C.	
S..26	30.32	64	75	54	89	85	87	S.W.	S.W.	12	12	F.	C.	
														

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 26, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York . . .	1,892,332	633	237	16.66	17.64	9.00	1.80	3.78	
Chicago . . .	1,678,967	364	166	24.30	11.88	11.88	5.13	6.21	
Philadelphia . .	1,164,000	249	118	11.31	14.50	4.06	2.32	4.06	
Brooklyn . . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . . .	560,000	—	—	—	—	—	—	—	
Boston . . .	494,205	—	—	—	—	—	—	—	
Baltimore . . .	496,315	—	—	—	—	—	—	—	
Cincinnati . . .	336,000	93	29	15.12	15.12	4.32	4.32	6.48	
Cleveland . . .	314,537	97	41	17.51	9.72	6.18	5.15	5.15	
Washington . . .	275,500	40	39	16.66	16.66	6.66	5.56	2.22	
Pittsburg . . .	238,617	70	25	29.62	17.04	15.62	4.26	9.94	
Milwaukee . . .	275,000	—	—	—	—	—	—	—	
Nashville . . .	87,764	27	11	29.60	18.50	11.11	3.70	7.40	
Charleston . . .	65,165	—	—	—	—	—	—	—	
Portland . . .	40,000	—	—	—	—	—	—	—	
Worcester . . .	98,687	29	9	17.25	3.45	6.90	3.45	3.15	
Fall River . . .	88,020	46	25	30.38	10.85	21.70	2.17	4.34	
Lowell . . .	84,359	34	16	29.40	2.94	23.52	—	2.94	
Cambridge . . .	81,519	39	16	28.16	7.68	17.92	2.56	—	
Lynn . . .	62,356	16	3	6.25	—	—	6.25	—	
New Bedford . .	55,264	20	10	25.00	5.00	15.00	—	10.00	
Springfield . . .	51,534	14	7	35.70	7.14	28.56	7.14	—	
Lawrence . . .	52,153	14	7	—	21.42	—	—	—	
Holyoke . . .	40,149	—	—	—	—	—	—	—	
Salem . . .	34,437	16	10	6.25	—	6.25	—	—	
Brockton . . .	33,157	6	2	16.66	16.66	16.66	—	—	
Haverhill . . .	30,185	10	1	10.00	—	—	—	—	
Malden . . .	29,709	9	4	11.11	11.11	11.11	—	—	
Chelsea . . .	31,295	8	3	12.50	25.00	12.50	—	—	
Fitchburg . . .	26,394	6	3	16.66	—	16.66	—	—	
Newton . . .	27,122	10	2	20.00	—	—	—	20.00	
Gloucester . . .	27,663	—	—	—	—	—	—	—	
Taunton . . .	27,093	10	3	10.00	10.00	10.00	—	—	
Waltham . . .	20,877	4	1	25.00	25.00	—	—	—	
Quincy . . .	20,712	—	—	—	—	—	—	—	
Pittsfield . . .	20,447	4	2	25.00	—	—	—	—	
Everett . . .	18,578	—	—	—	—	—	—	—	
Northampton . .	16,738	—	—	—	—	—	—	—	
Newburyport . .	14,554	3	0	—	—	—	—	—	
Amesbury . . .	10,920	—	—	—	—	—	—	—	

Deaths reported 2,085: under five years of age 805; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 372, consumption 272, diarrheal diseases 186, acute lung diseases 175, diphtheria and croup 92, typhoid fever 63, whooping-cough 18, scarlet fever 6, cerebro-spinal meningitis 5, erysipelas 2.

From whooping-cough New York 4, Chicago and Philadelphia 3 each, Cambridge 2, Cleveland, Washington, Providence, Nashville, Fall River and Lowell 1 each. From scarlet fever New York 3, Providence, Cambridge and Haverhill 1 each. From cerebro-spinal meningitis New York 3, Washington and Worcester 1 each. From erysipelas New York and Chicago 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending September 19th, the death-rate was 15.1. Deaths reported, 3,161: diarrhea 159, diphtheria 69, fever 58, whooping-cough 48, scarlet fever 48, measles 35.

The death-rates ranged from 8.7 in Derby to 22.0 in Salford: Birmingham 12.6, Bradford 14.6, Cardiff 16.0, Hull 16.5, Leeds 15.7, Leicester 10.5, Liverpool 19.3, London 14.6, Manchester 20.7, Nottingham 14.3, Portsmouth 12.8, Sheffield 14.6.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 26, 1896, TO OCTOBER 2, 1896.

CAPTAIN WILLIAM B. DAVIS, assistant surgeon, granted leave of absence for twenty-five days.

FIRST LIEUT. POWELL C. FAUNTLEROY, assistant surgeon, is relieved from duty at Fort Grant, Ariz., and ordered to Fort Niobrara, Neb., for duty.

CAPTAIN GEORGE MC CREERY, assistant surgeon, is relieved from duty at Fort Niobrara, Neb., and ordered to Boston, Mass., for duty as attending surgeon and examiner of recruits.

CAPTAIN NORTON STRONG, assistant surgeon, relieved from duty at Fort Sheridan, Ill., and ordered to Chicago, Ill., for duty as attending surgeon and examiner of recruits in that city.

FIRST-LIEUT. JOHN S. KULP, assistant surgeon, is relieved from duty at Fort Walla Walla, Wash., and ordered to Vancouver Barracks, Wash.

CAPTAIN WILLIAM STEPHENSON, assistant surgeon, is relieved from duty at Vancouver Barracks, Wash., and ordered to Fort Sheridan, Ill.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 3, 1896.

R. G. BRODRICK, assistant surgeon, detached from the "Franklin" and granted leave for two months.

W. K. VAN REYPEN, medical director, ordered to duty as member of the Inspection and Survey Board, October 1st.

J. C. WISE, medical inspector, detached from duty on the Board of Inspection and Survey and ordered to Museum of Hygiene, October 1st.

## OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING SEPTEMBER 30, 1896.

IRWIN, FAIRFAX, surgeon. Granted leave of absence for thirty days from October 5, 1896. September 28, 1896.

BANKS, C. E., surgeon. When relieved from temporary duty at Vineyard Haven, Mass., to inspect unseaworthy property at Boston, Mass., then to rejoin station in Washington, D. C. September 28, 1896.

WASDIN, EUGENE, passed assistant surgeon. Granted leave of absence for twenty-eight days from December 4, 1896. September 30, 1896.

BROOKS, S. D., passed assistant surgeon. To assume temporary command of Quarantine Station at Port Townsend, Wash., in addition to other duties for thirty days. September 16, 1896.

GEDDINGS, H. D., passed assistant surgeon. Granted leave of absence for seven days from September 22, 1896.

WERTENBAKER, C. P., passed assistant surgeon. To proceed from Delaware Breakwater Quarantine to Wilmington, Del., for special temporary duty. September 16, 1896.

YOUNG, G. B., passed assistant surgeon. Granted leave of absence for twenty-three days from October 1, 1896. September 22, 1896.

STEWART, W. J. S., passed assistant surgeon. To inspect quarantine establishment of Washington, D. C. September 22, 1896.

NORMAN, SEATON, assistant surgeon. To proceed from New Orleans, La., to Memphis, Tenn., for temporary duty. September 24, 1896.

GREENE, J. B., assistant surgeon. Leave of absence extended four days, upon expiration of which to proceed to Key West, Fla., for temporary duty. September 30, 1896.

## SEMI-CENTENNIAL OF ANESTHESIA.

The Committee of Arrangements begs leave to announce that the public exercises will be held in the new amphitheatre of the Massachusetts General Hospital on Friday, October 16th, at 11 o'clock A. M., and that in consequence of the large number of invited guests the number of seats for the members of the medical profession is very limited. The amphitheatre will be open to them at ten minutes before eleven o'clock. Invited guests are requested to assemble in the old amphitheatre at 10 o'clock.

J. COLLINS WARREN, M.D., Chairman.

## BOOKS AND PAMPHLETS RECEIVED.

Surgical Sterilization and Sterilizers in Private Practice. By Eduard Boeckmann, M.D., St. Paul, Minn. Reprint. 1896.

Some Remarks about Asepsis in Military Service. By Lieut.-Col. Eduard Boeckmann, Assistant Surgeon-General, Minnesota National Guard. Reprint. 1896.

First Annual Message of Charles F. Warwick, Mayor of the City of Philadelphia, with annual reports of Abraham M. Beitler, Director of the Department of Public Safety and of the Board of Health for the year ending December 31, 1895. Published by the City of Philadelphia. 1896.

A Text Book for Training Schools for Nurses, including Physiology and Hygiene and the Principles and Practice of Nursing. By P. M. Wise, M.D., Medical Superintendent, St. Lawrence State Hospital; Editor of the State Hospitals Bulletin; Professor of Psychiatry, University of Vermont; Member of the American Medico-Psychological Association, etc., with an introduction by Dr. Edward Cowles, Physician-in-Chief and Superintendent of the McLean Hospital, Boston, Mass. In two volumes. Vol. I. New York: G. P. Putnam's Sons. 1896.



*Amos A. Morton M.D.*



*J. C. Warren.*





COMMEMORATION  
of the  
*Fiftieth Anniversary*

*The First Public Demonstration  
of Surgical Anaesthesia  
at the  
Massachusetts General Hospital  
Boston, October, 16<sup>th</sup> 1846.*

*The Honour of your Company is requested  
October 16<sup>th</sup> 1896 at Ten o'clock*

*Wm Sturgis Bigelow*  
For the Trustees

*J. Collins Warren*  
For the Staff



## SEMI-CENTENNIAL OF ANESTHESIA.

## Addresses.

REMINISCENCES OF 1846.<sup>1</sup>

BY ROBERT T. DAVIS, M.D., FALL RIVER, MASS.

*Mr. President and Gentlemen:*—Fifty years ago to-day occurred the first authentic, unquestionable, public exhibition of anesthesia during a surgical operation. As one of the few surviving witnesses of that memorable event, the most important in surgical, and one of the most important in human history, I have been invited to state my recollection of the incidents attending it, and very gladly comply with the request.

The operation in which the anesthetic was administered was performed in the surgical amphitheatre of the Massachusetts General Hospital, by Dr. John C. Warren, in the presence of a number of distinguished surgeons and physicians, including Dr. Hayward, the elder Dr. Bigelow, one of the wisest and greatest men who have adorned our profession with their multifarious gifts and accomplishments, and his celebrated son, not then arrived at the zenith of his fame. The Harvard medical class was also present. After some delay Dr. William Morton appeared with his apparatus, when Dr. Warren addressed the medical class, which had not been previously notified of the proposed experiment, stating in substance that there was a gentleman present who claimed that he had discovered that the inhalation of a certain agent would produce insensibility to pain during surgical operations with safety to the patient, and he added that the class was aware that he had always regarded that condition as an important desideratum in operative surgery and he had decided to permit him to try the experiment.

The patient, who was a young man, was suffering from a vascular tumor of the neck on the left side, occupying the space from the edge of the jaw downward to the larynx and from the angle of the jaw to the median line. Dr. Morton proceeded to apply to the lips of the patient a tube connected with a glass globe. After the inhalation had continued four or five minutes he appeared to be asleep, and the operation was commenced and completed without further inhalation of the ether. It consisted of an incision about three inches in length over the centre of the tumor, and through the skin and subcutaneous cellular tissue, and the removal of a layer of fascia, which covered the enlarged blood-vessels. A curved needle armed with a ligature was then passed under and around the tumor, and considerable compression was employed.

During most of the time occupied by the operation the patient gave no sign of sensibility, and appeared to be sleeping quietly. A short time before its completion he moved his head, body and limbs, and muttered words which I could not hear distinctly, but upon recovering consciousness he declared that he had suffered no pain but simply a sensation like scraping the parts with a blunt instrument.

The exhibition of the anesthetic was admitted by those present to be a complete success. The operating surgeon expressed his satisfaction in these emphatic

words: "Gentlemen, this is no humbug." From that time forward it became the practice to employ it at the hospital in all operations of importance.

Dr. Morton continued to administer it until it was proved that it could be easily and safely administered by others. The apparatus which he had used in the first and a few subsequent instances was soon abandoned as unnecessary and attended with possible risk, and a concave sponge was substituted. Sulphuric ether as an anesthetic very promptly passed into general use in Boston and throughout the State, and soon afterward in public and private practice in the large cities of other States, followed by its employment all over the country wherever scientific surgery was practised. Its fame crossed the ocean, and it rapidly became a necessary adjunct to surgery in Europe as well as here, and beyond, even to the utmost limits of civilization—it did not stop there, but among savage tribes and barbarous races in distant continents and islands it followed the footsteps of the explorer, the trader and the missionary on its divine errand of mercy to mankind.

It is impossible to estimate or comprehend the importance of this beneficent discovery. It safely and absolutely secures insensibility to pain, unconsciousness and immobility for long periods of time, conditions which are essential to the successful performance of prolonged and delicate surgical operations. We know the pain and terror which accompanied ordinary surgical operations before the advent of anesthesia. I cannot forget the impression produced by the case of a naval officer, upon whom a painful operation was performed at this hospital. The suffering was so great that he repeatedly screamed, and was quite unable to suppress the exhibition of his agony. He afterward apologized to the gentlemen present, and stated that he could not control the expression of unendurable pain he had experienced, and to which his haggard features and shaking frame bore undoubted testimony.

It was fitting that the discovery of anesthesia should be ushered to the world from this historic institution, dedicated to the service of humanity in the broadest spirit of charity, by the gifts of noble men and women. It was fitting, also, that the most eminent surgeon of his day in New England permitted the experiment and performed the operation. His name will be always honored and gratefully remembered by the profession and the public, for his courage and wisdom in assuming the responsibility of sanctioning what might have proved a hazardous experiment, whose failure would have compromised his great reputation. Such considerations had no terrors for him; he thought only of the lasting and limitless blessings which would follow success. These qualities he inherited from an illustrious ancestry. He was the son of a Revolutionary patriot and military surgeon, who was for forty years the most distinguished member of our profession in New England, and a nephew of the heroic Warren, who left a profession whose duty it is to save human life, to offer up his own in defence of American liberty in the first pitched battle of the Revolution, and whose name is on the lips of every schoolboy who has read the immortal story of our nation's birth. Blessed forever be the memory of Joseph Warren, who fell at Bunker Hill, and that of John Collins Warren, who aided so signally the renowned discoverer of anesthesia, to whom all generations will be

<sup>1</sup> An Address delivered October 16, 1896, at the Commemoration of the Fiftieth Anniversary of the First Public Demonstration of Surgical Anesthesia.

debtors, in conferring that unequalled boon upon his fellow-men.

Let me add that discoveries of such permanent and universal interest and importance are not accidental. Such an assumption would be an impeachment of the order of the universe, and the designs of Providence. They are the natural and indeed inevitable result of the progress of scientific thought and investigation. The eager quest of previously unknown facts which distinguishes our age reaches the very threshold of discovery, when some fortunate explorer takes a step in advance, ascertains the new truth and proclaims it to the world. The history of surgical anesthesia furnishes no exemption from this general law. In the noon of this grandest of the centuries the spirit of humane science whispered these glad tidings; the attentive ear of Morton heard the message and transmitted it to mankind. Thenceforth this matchless discovery was destined to bestow its blessings, so long as the race shall endure—wherever in all time human suffering cries aloud for succor or languishes in silent despair, and the Divine attribute of mercy, aided by the wisdom of science, flies to its relief.

#### SURGERY BEFORE THE DAYS OF ANESTHESIA.<sup>1</sup>

BY JOHN ASHHURST, JR., M.D., LL.D., PHILADELPHIA.

*Mr. President and Gentlemen of the Board of Trustees and Hospital Staff, Ladies and Gentlemen:*—A study of the condition of operative surgery before the days of anesthesia reveals on the one hand a picture of heroic boldness and masterly self-control on the part of the surgeon, and on the other a ghastly panorama, sometimes of stoic fortitude and endurance, sometimes of abject terror and humiliation—but always of agonizing wretchedness and pain—on the part of the unhappy victim, man or woman, whose necessities required a recourse to the surgeon's aid. And from our vantage ground of a half-century's experience it is difficult for us to understand, why, with the constant and persistent efforts made by surgeons in past ages to lessen the pain of operations, and with the gradual but continuous accumulation of facts, showing that by certain agents pain could be temporarily abolished without danger, the eyes of all—patients as well as practitioners—yet seemed to be holden, and why, science and art working with a common object, if independently, though the whole world seemed to be trembling on the verge of the discovery, it yet was not until fifty years ago to-day that the crucial experiment was made in this hospital, and that surgical anesthesia became a glorious reality.

It is somewhat difficult to obtain an accurate picture of pre-anesthetic surgery from the patient's point of view, probably for a similar reason to that indicated by the lion in the fable, when he criticised the artist for always representing a combat between lions and men as terminating in a human victory—lions do not paint; and so, as operations are habitually reported by surgeons and not by patients, we read of the skill and intrepidity of the operator, of difficulties met and overcome, and of victories snatched as it were from the very jaws of impending defeat; but we hear little

of the tortures of the victim under the life-saving process, or, in an unsuccessful case, of the gradual subsidence of agonizing cries hushed in the silence of death. And yet we sometimes catch, incidentally, a side-glimpse of an operation from the patient's standpoint, and can thus form some faint notion of the shades as well as of the high lights of capital surgery in days gone by.

Those who are familiar with the history of British surgery seventy years ago will recall the famous case of "*Cooper versus Wakley*," in which the enterprising founder and proprietor of the *Lancet* was sued and mulcted, though in but nominal damages, for the report of an operation for lithotomy performed by Sir Astley Cooper's nephew, Mr. Bransby B. Cooper. The report opens with a quotation from John Bell, referring to "long and murderous operations, when the surgeon labors for an hour in extracting the stone, to the inevitable destruction of the patient," and then, having described in terms as graphic, as uncomplimentary, the operator's prolonged efforts to remove the calculus, and the words which showed his own anxiety and discomposure during the process, adds: "Such were the hurried exclamations of the operator. Every now and then there was a cry of 'Hush!' which was succeeded by the stillness of death, broken only by the horrible squash, squash, of the forceps in the perineum. 'Oh! let it go—pray let it keep in!' was the constant cry of the poor man." The patient was on the table nearly an hour, and, after a night and a day of great pain, "death" adds the reporter, "ended the poor fellow's sufferings, about twenty-nine hours after the operation." The fatal result appeared to have been due to peritonitis. It is, indeed, not an unheard-of thing that a surgeon's presence of mind should fail him in a difficult operation even at the present day; but at least the patient, unconscious through the blessing of anesthesia, does not know it, and this complication is spared, to the great comfort of all concerned.

The "pitilessness" which Celsus urged as an essential trait in the operative surgeon—though Percy and Laurent declare that this pitilessness was meant to be apparent only—was, indeed, before the days of anesthesia, a feature in the surgeon's character which impressed very strongly the public generally as well as those immediately connected with the operation; and it may be feared that there are not wanting, even at this nineteenth century's end, some who would echo the comment of the younger Pliny upon the operative surgeons of his time: "They make experiments through deaths, and no head is secure from them."

It is interesting to recall that Sir James Simpson, of Edinburgh, shortly after beginning his professional studies, was so affected by "seeing the terrible agony of a poor Highland woman under amputation of the breast," that he resolved to abandon a medical career and seek other occupation; happily, his intention was reconsidered, and he returned to his studies, asking himself, "Can anything be done to make operations less painful?" and, as every one knows, in less than twenty years became himself a high priest of anesthesia, and the introducer into surgical and obstetrical practice of ether's great rival, chloroform.

Not only did delicate women and tender children dread the ordeal of the surgeon's knife, but strong and brave men also recoiled from its use in horror: Buffon preferred death to relief from the agonies of calculus

<sup>1</sup> An Address delivered October 16, 1896, at the Commemoration of the Fiftieth Anniversary of the First Public Demonstration of Surgical Anesthesia.

by the operation of lithotomy, and case after case is narrated by Monfalcon and other writers, in which men submitted themselves with the utmost calmness and fortitude to the hands of skilful operators, instantly falling into collapse after the first incision, and without undue loss of blood, quickly succumbing to the depressing effects of simple shock and pain.

No braver or more gallant gentleman ever lived than Admiral Viscount Nelson, and after his right elbow had been shattered by a French bullet in the assault at Teneriffe, he manifested the utmost courage, refusing to be taken to the nearest ship lest the sight of his injury should alarm the wife of a fellow officer whose own fate was uncertain, and when his own ship was reached, climbing up its side without assistance, and saying, "Tell the surgeon to make haste and get his instruments. I know I must lose my right arm, so the sooner it is off, the better." "He underwent the amputation," we learn from a private letter of one of his midshipmen, "with the same firmness and courage that have always marked his character," and yet so painfully was he affected by the *coldness* of the operator's knife, that though when next going into action at the famous battle of the Nile, he could after calmly finishing his meal say to his officers, "By this time tomorrow I shall have gained a peerage or Westminster Abbey," yet he gave standing orders to his surgeons that *hot water* should always be kept in readiness during an engagement, so that if another operation should be required, he might at least have the poor comfort of being cut with *warm* instruments.

But the most striking picture of which I am cognizant, showing the way in which an intelligent patient looked upon a surgical operation, is to be found in a letter written to Sir James Simpson by a friend, himself a member of the medical profession, who had had the misfortune to lose a limb by amputation before the introduction of anesthesia: "I at once agreed," he says, "to submit to the operation, but asked a week to prepare for it, not with the slightest expectation that the disease would take a favorable turn in the interval, or that the anticipated horrors of the operation would become less appalling by reflection upon them, but simply because it was so probable that the operation would be followed by a fatal issue, that I wished to prepare for death and what lies beyond it, whilst my faculties were clear and my emotions were comparatively undisturbed. . . . The week, so slow, and yet so swift in its passage, at length came to an end, and the morning of the operation arrived. . . . The operation was a more tedious one than some which involve much greater mutilation. It necessitated cruel cutting through inflamed and morbidly sensitive parts, and could not be despatched by a few strokes of the knife. . . . Of the agony it occasioned I will say nothing. Suffering so great as I underwent cannot be expressed in words, and thus fortunately cannot be recalled. The particular pangs are now forgotten; but the blank whirlwind of emotion, the horror of great darkness, and the sense of desertion by God and man, bordering close upon despair, which swept through my mind and overwhelmed my heart, I can never forget, however gladly I would do so. Only the wish to save others some of my sufferings makes me deliberately recall and confess the anguish and humiliation of such a personal experience; nor can I find language more sober or familiar than that I have used, to express feelings which, happily for us all, are

too rare as matters of general experience to have been shaped into household words. . . . During the operation, in spite of the pain it occasioned, my senses were preternaturally acute, as I have been told they generally are in patients under such circumstances. I watched all that the surgeon did with a fascinated intensity. I still recall with unwelcome vividness the spreading out of the instruments, the twisting of the tourniquet, the first incision, the fingering of the sawed bone, the sponge pressed on the flap, the tying of the blood-vessels, the stitching of the skin, and the bloody dismembered limb lying on the floor. Those are not pleasant remembrances. For a long time they haunted me, and even now they are easily resuscitated; and though they cannot bring back the suffering attending the events which gave them a place in my memory, they can occasion a suffering of their own, and be the cause of a disquiet which favors neither mental nor bodily health."

On the side of the surgeon, we find throughout the ages a constant effort to diminish the terrors of operations, and a continuous reprobation of the distressful, not to say cruel, modes of practice adopted by preceding generations. "Who can read without a kind of horror," cries Monfalcon, "the account of those frightful operations which were then practised? And yet the time is not very far distant from ours, when they lopped off a limb by striking it violently with a heavy knife; that time when they knew neither how to stop nor how to prevent hemorrhage but by burning the part whence the blood jetted with boiling oil or the red-hot iron; that time when surgeons armed themselves at every moment with pincers, with burning cauteries, and with a thousand instruments the representations even of which cause terror." Will it happen that on the occasion of some future anniversary our successors will speak of our operative triumphs with the same scorn and abhorrence with which writers of the present day sometimes refer to the great deeds of our surgical forefathers?

The belief that operations might be rendered painless and the hope that some means might be discovered by which this end should be accomplished appear to have been present in the minds of surgeons from the earliest periods. Witness the accounts of the Memphis stone, described by Dioscorides and Pliny, which Littré surmised to have been merely marble which by steeping in vinegar was made to give forth the fumes of carbonic acid; and of the mandragora, employed according to Theodoric, when mixed with other narcotics, by inhalation, and causing a sleep from which the patient could only be aroused by the fumes of vinegar; so profound was the stupor induced by this drug that Bodin assures us that under its influence a man submitted without consciousness to a painful operation, and continued to sleep for several days thereafter.

Vigo speaks of the whole body being "brought asleep by the smelling of a sponge wherein opium is," but warns his readers that the practice is dangerous because the use of opium is sometimes followed by gangrene. In his work on "Natural Magic," Baptista Porta speaks of a volatile drug, kept in leaden vessels, which produced sleep when applied to the nostrils, and Perrin suggests that this may actually have been ether or some other of our modern anesthetic agents.

Others endeavored to prevent the pain of operations by mechanical means. The Assyrians, Hoffman

assures us, compressed the veins of the neck, apparently by tying a band around the part, before practising circumcision, and compression of the carotid arteries was suggested as an anesthetic measure in more modern times by Dr. Fleming; while still more recently Dr. Augustus Waller has shown that insensibility may be induced by compressing the cervical vagi. Garroters have indeed clearly shown, as remarked by Simpson, that a person may readily be choked into unconsciousness, but it is not surprising that their mode of practice has not commended itself to surgeons for general adoption.

Compression of the limb by a fillet or tight ligature, before amputation, is referred to by Paré as a mode of alleviating the suffering which attends that procedure, and Benjamin Bell tells us that "in amputating limbs, patients frequently desire the tourniquet to be firmly screwed, from finding that it tends to diminish the pain of the operation." The same writer refers approvingly to the suggestion of Mr. James Moore, that pain should be controlled by the application of a screw compressor to the principal nerve of the part, but surgeons generally appear to have agreed with Monfalcon that the inconveniences of such an apparatus fully equalled its very slight advantages.

Mental pre-occupation was sometimes sought as a means of preventing pain. Richard Wiseman found that soldiers dreaded the loss of a limb much less if it was removed immediately, while they were "in the heat of fight," than if the operation was postponed until the next day; "wherefore," he says, "cut it off quickly, while the soldier is heated and in mettle"; and Renaudin recalls the case of the amiable Dolomieu, who, exposed to the pangs of starvation in a Neapolitan dungeon, measurably alleviated his own distress by engaging in the composition of a Treatise on Mineralogy, while his unfortunate servant and fellow-prisoner, who had not the same intellectual resources, was hungry enough for both.

But the presence of pain was not the only evil dreaded by our predecessors in attempting important operations: the great risk of fatal accident from some involuntary movement of the patient was constantly present to the mind of the conscientious surgeon. "How often," says Dr. Valentine Mott, "when operating in some deep, dark wound, along the course of some great vein, with thin walls, alternately distended and flaccid with the vital current — how often have I dreaded that some unfortunate struggle of the patient would deviate the knife a little from its proper course, and that I, who fain would be the deliverer, should involuntarily become the executioner, seeing my patient perish in my hands by the most appalling form of death! Had he been insensible, I should have felt no alarm." So greatly was the responsibility of using the knife felt by the best-informed surgeons of pre-anesthetic days, that many, like Haller, distrusted their own manual dexterity, and declined to perform operations which, while recognizing their necessity, they felt should be left to other surgeons differently constituted from themselves. Would that a little of this Hallerian diffidence might affect some tyros of the profession in our own day, who, without the slightest preliminary practical training, do not hesitate to undertake the most hazardous procedures, and seem to consider themselves disgraced if they cannot count one or more abdominal sections, even if terminating fatally,

within the accomplishments of their first year's practice!

Coming down to the days more immediately preceding the date of the great discovery, we find that opium and alcohol were the only agents which continued to be regarded as of practical value in diminishing the pain of operations, though the attendant disadvantages of their employment were of course recognized. "Previous to every painful operation," says Dorsey, "a dose of laudanum should be administered." "I was in the habit," says Dr. Mott, "of giving opiates freely before the introduction of anesthetics, both before and after operations, . . . and opium and its preparations are the only anodynes well adapted to surgical use. No substitutes are worthy of confidence." Demme tells of a woman, who, under the influence of opium, submitted to amputation at the hip-joint, and emitted but a single cry; and I myself recall distinctly patients, who, in the hands of that excellent surgeon, the late Dr. George W. Norris, had limbs amputated with almost no manifestation of pain when well charged previously with opium and whiskey. Alcohol, pushed to the point of producing intoxication, was employed as an anesthetic by some surgeons, and Dorsey tells us that Dr. Physick, following Richerand's suggestion, used it successfully for its relaxing effect in a rebellious case of dislocated jaw, in which on account of the patient's "extreme debility" it was not thought prudent to resort to the usual remedy — "blood-letting *ad deliquium animi*."

Meanwhile facts were accumulating, the significance of which we can now plainly recognize, but which excited no attention at the time. Sir Humphry Davy had, in the very early days of the nineteenth century, experimented with nitrous oxide gas, afterwards employed by Horace Wells, and had in so many words suggested its use as an anesthetic in minor operations; its power of preventing the sensation of pain was well known to many persons, and it was the custom at some of our medical schools — at the University of Pennsylvania for one — for students to breathe the "laughing gas," as it was then called, for diversion. The use of ether by inhalation had been still earlier recommended by Beddoes, Pearson and Thornton, as a remedy for certain diseases of the lungs, and in 1805 your own Warren had employed it "to relieve the distress attending the last stage of pulmonary inflammation." Its intoxicating qualities, when inhaled, and its power, when in sufficient concentration, to produce stupefaction, had been recognized, in 1839, in Pereira's well-known treatise on *Materia Medica*, and were quite familiar to American medical students; and it is no doubt possible — I certainly have no wish to deny it — that in isolated cases it may have been used as a means of relieving pain by individual practitioners, as by Dr. Long, of Athens, Georgia, whom Perrin, with that happy disregard of the geography of all countries except their own, which is characteristic of French writers, calls the "Greek physician."

But yet — and yet — surgeons went on, in every country, cutting and burning, and patients went on writhing and screaming, until on the sixteenth day of October, in the year 1846, in the Massachusetts General Hospital, Dr. JOHN C. WARREN painlessly removed a tumor from a man who had previously been etherized by Dr. WILLIAM T. G. MORTON — and SURGICAL ANESTHESIA became the priceless heritage of the civilized world.

WHAT HAS ANESTHESIA DONE FOR SURGERY?<sup>1</sup>

BY DAVID W. CHEEVER, M.D.

WHAT victim of surgery, who, under ether, sinks into a calm and dreamless sleep, during which his abdomen can be cut open, his bowels taken out, handled and replaced, his nerves cut, his veins or arteries tied, and his skin sewed up, and who is made so absolutely oblivious as to ask on awakening, "Are you not ready to begin?" but concedes with gratitude, on realizing the result, that this is the greatest discovery ever made for the happiness of mankind?

In proportion as anticipation is worse than reality, must be estimated the mental relief brought about by anesthesia.

To dread the knife, to shrink from an operation, to fear pain, is there a more universal instinct? It is next to the vital instinct of self-preservation. What iron will, what previous agony must induce that fortitude which can bring the sufferer to lie down and be cut without stirring!

All this is annulled by anesthesia. How much mental shock is thus removed!

What is surgically termed the "shock of the operation," or the disturbing effect on the nervous system of violence done the flesh and nerves, is also largely diminished. Anticipation is done away with; pain is prevented; shock is reduced.

The patient consents to operation earlier; he does not wait until life becomes unbearable, but calmly contemplates surgery as the natural and easy channel of relief. Hence his chances of benefit from an operation are much increased; he averts destructive processes, shortens disease, is more likely to recover. So much is done for the patient.

To the surgeon anesthesia gives the patient asleep, motionless, senseless. He need not hurry; he need not sympathize; he need not worry; he can calmly dissect, as on a dead body; heedful only that the etherizer is competent, the breathing and pulse watched, the operation not prolonged beyond the verge of exhaustion.

The surgeon, then, can do better work; he can be more careful; he can pause and consider; he can choose his steps; he can be deliberate, if not dexterous. He can even summon the aid of the pathologist and his microscope, who, in ten minutes, while the patient sleeps, can decide the nature, the innocence or malignancy, of the tumor he is removing.

It is also just to believe that the moral fibre of the surgeon is less strained; judicial callousness is no longer called for; he need not steel his heart, for his victim does not feel.

For surgery and for diagnosis, anesthesia has done even more. It has enlarged its domain by rendering justifiable and even promising severe and delicate operations.

The tyranny of misguided conscience drove the inquisitors of the Middle Ages to rack the joints apart: so, too, the surgeon was formerly obliged to use the rack to tire the muscles and disrupt the capsule, to reduce a dislocation. Now, anesthesia relaxes the muscles, and manipulation rolls the bone into the socket.

Homeric strength was needed to bear Homeric

surgery. Strong men and calm women endured desperate mutilations and recovered. But at what a cost!

Such surgery must necessarily have been largely traumatic, or the result of emergencies threatening death if not relieved.

It is not too much to say that all the finer work of plastic, conservative and abdominal surgery dates from the discovery of anesthesia. It could not have been done before. Neither surgeon could persist, nor patient endure it. Perhaps one thousand ovariectomies were done by Sir Spencer Wells before asepsis was much practised, but they were all done since anesthesia was known. The tedious details in a radical cure of hernia were mostly mechanical before anesthetics; and the operative measures have been adopted since.

Formerly the surgeon was estimated for dexterity and quickness. Now he is esteemed the great surgeon, who to judgment adds dexterity, and to dexterity patience.

Anesthesia was the necessary precursor of asepsis. Without the former the latter would not be what it now is. Even if antiseptic agents were used in dressing wounds, the operations which caused the wounds could not have been done aseptically without anesthesia.

The essence of asepsis is detail, tedious rules and precautions, prolonged and accurate dressings. All this requires time, immobility, unconsciousness. To stitch the most delicate tissues with accuracy, to match the bowel or bladder so that it will not leak, how could this be done on a conscious and quivering patient?

First, anesthesia; second, asepsis. They must be inseparable for success.

All visceral surgery, which deals with the great serous cavities, and which constitutes the proud distinction of modern surgery, depends on anesthesia first, and on asepsis afterward. The latter is as beneficent a discovery as the former. Hand-in-hand, equal benefactors, anesthesia and asepsis, march calm and triumphant. Together they have altered life, enlarged what is worth living for, postponed death. May we not claim now as fulfilled for surgery that old saying which our fathers regarded as the acme of success and skill in curing the patient: *Tuto, cito, et jucunde* (Without delay, without danger, without pain)?

Is there no reverse to this brilliant picture? There is if we allow it; but most dangers and mischances can be averted by care. The danger of immediate death from anesthetics is no greater than the ordinary risks of life in the daily pursuits of civilized communities. The use of power, whether steam or electric, surrounds the life of cities with hourly perils; and the chance of succumbing under the inhalation of ether is no greater than the risk of a street accident or a railway journey. Of those who inhale sulphuric ether, about one in fifteen thousand die. I formerly believed that chloroform was ten times more fatal than ether; larger statistics have modified that opinion, and it may now be fairly stated to be five times more dangerous, or of those who inhale chloroform about one in three thousand die.<sup>2</sup>

Since neither anesthetic is given to the well and sound person, but always to the sick or injured, we cannot eliminate the chances of death from inhalation,

<sup>2</sup> Appendix, I.

<sup>1</sup> An Address delivered October 16, 1896, at the Commemoration of the Fifteenth Anniversary of the First Public Demonstration of Surgical Anesthesia.



which may be increased by infirm hearts, lungs or kidneys. The patient is forced to take those chances. And yet, how few perish from these pain-dispelling agents!

An elementary alcohol, sulphuric ether acts like alcohol in its effects when inhaled. A quickened pulse, a stimulated heart, a vivid capillary blush, congestion of the brain, mental exhilaration, confusion, intoxication, a lethargy which is not lethal.

Ether is fatal unless breathed with the oxygen of atmospheric air; nay more, provision to have the carbonic acid exhaled must also be provided for. An uncovered sponge for an infant, and a sponge covered with a porous towel for the adult, are still among the best—and surely the safest—inhalers: rigidity, lividity, stertor, only emphasize the need of more air.

Chloroform affects the heart more suddenly and surely than the respiration. It is a heavier gas, pleasant to take, less bulky, quicker in producing unconsciousness, less irritating to the lungs, less followed by vomiting; but when fatal, suddenly fatal, without premonition. Its primary effect is depressing; the skin is cool and pale; the pulse not stimulated; sleep follows speedily.

The distinction of danger from safety in the inhalation of both anesthetics may be described in the words of Shelley:

"How wonderful is Death,  
Death and his brother Sleep!  
One pale as yonder waning moon,  
With lips of lurid blue;  
The other, rosy as the morn  
When throned on ocean's wave,  
It blushes o'er the world."

A secondary danger is from prolonged anesthesia. Sulphuric ether inhaled the first half-hour is stimulant; the second half-hour, tolerable; the third half-hour, depressant. The pulse creeps up from the eighties to the one hundred and twenties; the skin cools; color fades; sweat rains from the surface; respiration becomes shallow or sighing; all signs of exhaustion, collapse and death. Intent on a delicate, and as he thinks, necessary and final step in his operation, the surgeon may persist too long, and the patient sink too low for recovery. This danger is emphasized by the delays of aseptic precautions, of minute embroidery of serous membranes with sutures, of too long an exposure of the vital cavities.

A common, but not constant, effect of the inhalation of ether, and of chloroform to a less degree, is nausea and vomiting, both while asleep and after waking. If only of brief duration, its only danger is in disturbing the wound, as the humors of the eye or the ligatures on the pedicle of an ovarian cyst. This danger is, however, to be counted. If of long duration it marks a condition of secondary shock, which is often fatal.

No agent has been found to be a specific to prevent vomiting. An empty stomach is an essential in inhaling anesthetics. As remedies, the bromides, the subcutaneous injection of morphia and atropia, the inhalation of oxygen have each given a certain success. Much vomiting may be prevented by giving ether only to the verge of insensibility; not filling the blood too full of the vapor; taking the ether off permanently as early as possible; for unconsciousness persists for fifteen to twenty minutes after apparent rousing, and the patient's motions and moans are automatic, and not remembered after waking.

Sulphuric ether irritates the mucous membrane of the bronchi and minute air-passages. We know how it congests the eyes if it runs into them. It provokes a large and sometimes dangerous, secretion of sero-mucus fluid from the bronchi; this gets churned up with air, and fills the throat with a bubbling fluid like soap-suds. It is both annoying and dangerous. Chloroform causes much less of this condition.

Acute bronchitis, pulmonary edema, broncho-pneumonia (but not true lobar-pneumonia),<sup>3</sup> may follow, and turn the scale against the patient. It is claimed that a previous injection of atropia will often dry the throat and bronchi, and avert this excessive secretion. Light inhalations, plenty of air, watchfulness to swab the throat, care to remove the ether early, are the best remedies.

Both sulphuric ether and chloroform congest the kidneys, and produce albuminuria in more than one-half the cases.<sup>4</sup> This albuminuria is usually of short duration; but one can readily see that a diseased kidney might be overwhelmed by it, just as a feeble heart would succumb to chloroform, or diseased lungs to an increased bronchial secretion. Bright's disease, diabetes, any inflammation of the air-passages, pleuritic effusion, acute bronchitis, valvular disease of the heart, croup,—all are unfavorable conditions for an anesthetic.

The thermo-cautery about the face demands chloroform.

If in spite of these unfavorable conditions only one person in fifteen thousand succumbs to the inhalation of ether, we may conclude that we shall not find a safer agent to produce unconsciousness, though we may a more agreeable.

#### APPENDIX.

##### I. — MORTALITY.

Combined statistics of Gurlt, of Berlin, and Jaillard, of Geneva:  
*Chloroform*. — 691,319 cases, 224 deaths. One death in 3,082 cases.  
*Ether*. — 341,068 cases, 23 deaths. One death in 14,828 cases.

##### II. — KIDNEYS.

Examination of 50 cases, before and after ether. Urine filtered, and nitric-acid test used. In 36 cases out of 50, ether produced albumin, or increased that already existing. But the German authorities believe that chloroform irritates the kidneys more than ether. Albumin after ether was slight in amount and of short duration.

Second Lyman Prize for 1894, John Baptist Blake, M.D. Boston Medical and Surgical Journal, vol. cxxxi, p. 560.

##### III. — LUNGS.

Prescott believes that ether cannot produce true lobar pneumonia. He gives only two cases in about 40,000 ether inhalations.

Boston Medical and Surgical Journal, March 28, 1895, vol. cxxxi, No. 13, p. 304, W. H. Prescott, M.D.

## ANESTHESIA IN OBSTETRICS.<sup>1</sup>

BY J. P. REYNOLDS, M.D.

IN the welcome that greeted anesthesia in this city, fifty years since, its promise to women in labor was not overlooked. Oliver Wendell Holmes, recounting its blessings, rejoiced that it lifted "the primal curse"; Walter Channing, our honored first professor of midwifery, devoted an important volume, his "Etherization in Childbirth," to its early triumphs. To-day, after the half-century, it is my glad office to lay before you the priceless worth of anesthesia in obstetrics.

In operative obstetrics, in the high and difficult use

<sup>1</sup> An Address delivered October 16, 1896, at the Commemoration of the Fiftieth Anniversary of the First Public Demonstration of Surgical Anesthesia.

<sup>2</sup> Appendix, III, Dr. Prescott.

<sup>3</sup> Appendix, II, Dr. Blake.



of instruments, in the introduction of the hand for version and extraction, anesthesia resembles at all points that of the graver procedures of general surgery. It brings the same admirable results: a patient in blissful unconsciousness; an operator delivered from all concern for another's suffering, with ample time for exact and thorough diagnosis, and free to work with all desired accuracy, delicacy and caution. In obstetrics there is often a farther gain of great moment: loosing the formidable grip of the uterine muscle. Mention must also be made of the induction of premature labor; in which the power of safely maintaining for many continuous hours profound etherization is rapidly securing for the method of passive manual dilatation a deserved preëminence. It may be added, that five minutes only of deep anesthesia, rapidly induced, prove at times no mean resource in softening the thin, wiry edge of a tardily dilating uterine mouth. After profound anesthesia during delivery, increased watchfulness against hemorrhage is always wisely enjoined; but where the precautions which are in all labor indispensable, are duly enforced, any added risk is perhaps rather inferred than proven.

The service of ether in puerperal convulsions is still more striking. Used in the manner now to be described, it prevents any new seizure. An eclamptic patient is brought with all possible rapidity to complete unconsciousness. During many consecutive hours this is firmly kept up, always under strictly professional care: there can be no delegation of the physician's authority to any hands less qualified than his own, not even to those of the best trained nurse. An utterly passive condition is secured; and then, on the least restlessness, agitation, indication of pain or uneasiness in any region; above all, at any slightest tremor of an eyelid, or other known premonition of a fresh attack; the remedy must be instantly pushed to full, snoring anesthesia. No evil effects will ensue from continuing this state for many successive hours: and these can seldom be fewer than eight or ten. Under anesthesia food is, of course, withheld. It must be distinctly understood, that such an employment of ether has no power of cure. In exhibiting it we absolutely prevent fresh paroxysms, each of which strikes a new blow at the brain and nervous centres, and we gain at the same time the all precious opportunity for treatment. This latter must be meanwhile actively pressed: first and foremost, unless already accomplished, the emptying of the uterus; to temporize with that does no good whatever, and may bring incalculable harm. Improvement in the renal condition is the best proof of amendment. When to withdraw the ether is always a most anxious problem; steady continuance of it being in all doubtful cases the far safer alternative.

In making these strong assertions in regard to etherization in eclampsia I weigh well my words. Carelessly or ignorantly followed, they may work mischief. But the subject is of extreme importance. In my results there has not been the slightest variation; and I am confident that I do not stand alone. The time has come to present these views to the medical profession, and to press their general acceptance.

For the prolonged use in eclampsia just described, and even for that already suggested in the induction of premature labor, I dare not approve chloroform.

Would that any words of mine could bring home, as I feel it, the inestimable blessing of ether in all

labor, silence groundless excuses for its neglect, and so rouse professional interest that no one should lightly forbid it to any woman in childbed! "Bless God for ether," has burst from the lips of thousands on thousands of suffering women. It might well be made the cry of countless thousands more.

In normal labor due anesthesia is free from every shadow of danger. The alleged after-evils do not exist; on the contrary, the gain in safety even outweighs the expressible comfort and relief. It is indispensable that the anesthetic be administered only within the limits now to be laid down; on this is conditioned the truth of all that follows.

Ether, when properly given in normal obstetrics, never contents the patient. She incessantly cries for more, and if in first labor, indignantly claims to be forthwith put asleep, and to know nothing till after the birth. The anesthetic is allowed only during the uterine contraction; the time of positive pain. In the interval it is withdrawn. Consciousness should then return, and there is often intelligent speech. Ether may be given at any period, and might be continued from the beginning of labor to its close. There should be here no question of the so-called "stages" of labor. One only rule governs its use. Whenever the attendant sees that the woman's endurance of pain begins to tell upon her patience and courage, the moment for ether has come. It is to be kept up so long as this need lasts; no longer. In an appreciable minority of cases, a mother who in her early suffering has been clamorous for relief, will herself, when the so-called "real" pains appear, and conscious progress is made, put it away: "I can do without it now." On its first employment, a lull often comes in the uterine action, the patient sinking into a much-needed repose; to which soon succeeds a yet more vigorous advance. The extremely rare case in which no such renewal occurs must plainly forego anesthesia. It should be noted, that in the earliest pains some careful observers hold that chloral in suitable doses gives still greater relief.

With even these limitations the value of ether can hardly be overestimated. It is something, that in the distress a good and decorous deportment is no longer enjoined; it is everything, that tender hands can now, as in other nursing, solace each access of suffering with positive help; but far, far beyond this, that we thus uphold in the patient that vital resistance which mental and nervous tension and the long endurance of pain, more than all other causes combined, destroy; that which soothes becoming likewise a chief guarantee of safety; a help against hemorrhage.

Unhappily, a frequent resort to ether may not be asked from lying-in hospitals and the great public charities. These establishments burdened with enormous and ever-enlarging cost for the first needs of the destitute — shelter, food, warmth, nursing — cannot add the great increase of responsible attendants which general anesthesia would require. But even for private practice, anesthetics are not in simple labor extensively used. The medical profession does not accept what has just been said of ether. Its benefits are sturdily denied. Men declare that it promotes flooding, that it wastes important time, that it presents them, in place of a woman bearing her pain with dignity and fortitude, a creature regardless of appearances and only clamoring every moment for ease.

These charges come mainly, I believe, from those who, under varying motives, content themselves with

a tardy, perfunctory, or even deceitful, resort to ether; "refusing it," as women sometimes say, "when we most need it, and allowing it when we could most easily do without it." Later, one may readily ascribe to the anesthetic, which has in no true sense, been tried, those common disasters of childbed, which its proper use would largely ward off; and these assertions, once made, supply a ready excuse for that numerous, and it is to be feared, increasing class who do not so much oppose ether as willingly evade and neglect it.

We have seldom possessed an accoucheur of wider experience, or a teacher of greater gifts of tongue and pen, than the late famous Fordyce Barker of New York. Several years ago, I listened with eager interest as he, in this city, before the American Gynecological Society, deeply condemned the growing disuse of ether in obstetric practice. "Through a long series of years," he said, "I have rarely attended labors without ether. I have never seen from it any evil effects. Especially has it not caused a tendency to hemorrhage. Indeed, I should say, that instances of flooding that I have seen have rather occurred in cases where ether had not been employed." Years have but deepened my conviction of the exact truth of the words that I then so heartily welcomed.

The time of an obstetric attendant is no longer his own; he may not condemn the extra half-hour that etherization will now and then compel. His approval or his dislike of his patient's attitude in her distress is of trivial importance. Objections like these have no weight unless urged by the sufferer. She was never known to advance them.

The charge that anesthesia increases flooding cannot be thus lightly set aside. As matter of opinion it has been to-day claimed: that the due use of ether saves the mother's courage and strength; that it preserves, not breaks down, uterine contractile power; that it thus lessens the risk of hemorrhage. It will be found that clinical facts do not belie this theory. They wait for other observers as they did for Barker. Those in search of them are prayed to make trial of ether in all confinements, not, indeed, forgetting the due limitations, but ungrudgingly, thankfully, gladly.

One remembers tender hearts that doubted their right to evade, under ether, heaven-sent pain. How marvellously the words graven beneath our cherished Ether Memorial send down, in reply, their adoring praise:

"This also cometh forth from the Lord of Hosts, who is wonderful in counsel and excellent in working."

### THE SURGERY OF THE FUTURE.<sup>1</sup>

BY CHARLES MCBURNEY, M.D., NEW YORK.

WE worship to-day at the shrine of the Goddess Anesthesia, whose gentle sway over the surgical world of all civilized countries has so beneficently displaced the reign of terror which existed only two generations ago. What anesthesia has done for surgery has been already most eloquently told, and we all realize that without it the best of modern work would be impossible.

It seems but yesterday, and yet it is already a matter of history, that the wonderful discovery of the aseptic

treatment of wounds was given to us, through whose agency countless thousands of human lives have been preserved.

Through these two discoveries surgery has become a gentle art: for the agonies of operations, and the fatal diseases of wounds, have given way to a painless sleep, and an awakening to a safe recovery. And bacteriology, which in its infancy gave birth to aseptic surgery, has penetrated with its brilliant light a darkness which our predecessors believed would last forever.

So generous, indeed, has the recent past been to surgery with gifts which make our science rich almost beyond belief, that the future may well be modest in telling us what it will do. It would almost seem as if the toilsome ascent had been accomplished, and as if the future could hold for us no obstacles that could tax our powers. That such a comfortable view is not shared by the ever-active surgical worker and his numerous collaborators is fortunate, and we are thus assured that difficulties, perhaps not so large as those already conquered, but both grave and numerous, will, by increasing effort, be swept away and relegated to the past.

It seems to me that in the immediate future the greatest surgical victories are to be won by the aid of bacteriology, which has already unlocked so many mysteries. Through it diphtheria and tetanus have been brought within the list of frequently curable diseases. Why should we not soon be able to say even more of general sepsis, tubercle and cancer? We have already reached a high degree of perfection in preventing the entrance of sepsis through the surgical or the accidental wound; but, given a case where sepsis has already deeply invaded the body, through whatever point of entrance, and we are well-nigh helpless. We may empty an abdomen of pus, and even remove the cause of the disease, but we know nothing in regard to overcoming the sepsis already widespread throughout the body. Is it not in store for us that the discovery will soon be made by which we shall be able to destroy the sepsis-producing organism, no matter what its source, no matter how widespread? I believe it is, and that we will, in the not distant future, be able to render the body immune to the existence of sepsis even of internal origin.

All of the general surgeons, and many of the special ones, are devoting a large amount of their time to the treatment of tubercle. Operative surgery has attacked it very successfully,\* but we need the help of the bacteriologist and of the physician to enable us to prevent its recurrence and to treat it in many localities. Surely the day is close at hand when the surgeon's knife, which so readily removes the products of tubercle, will be aided by the remedy which destroys the bacillus itself.

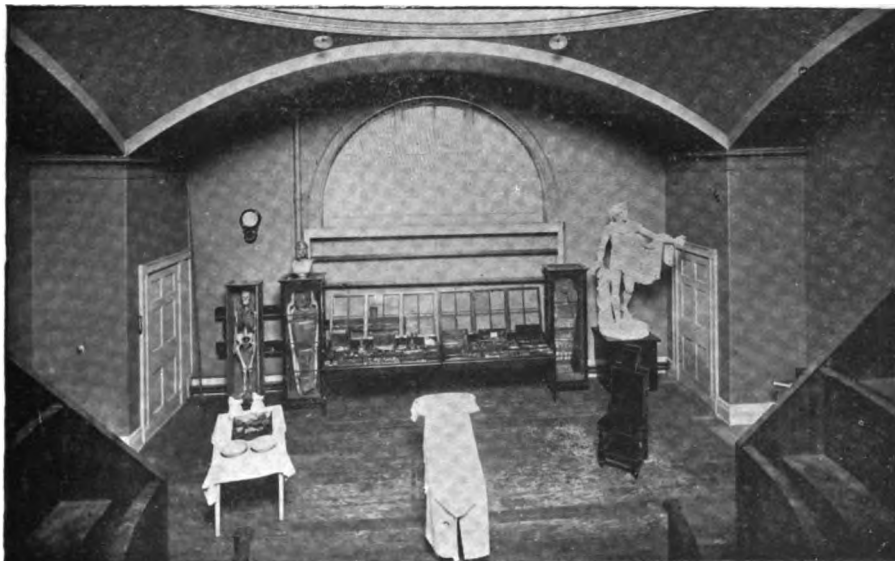
Cancer in all its forms is still our worst enemy. Operative surgery has done much, very much, to overcome it, aided by greatly improved diagnosis, and by means of more scientific and more radical operations. But the discovery of the true nature of the disease, the solution of the question as to whether it owes its existence to a living organism, and therefore one capable of death, or not, are still in the hands of the future, and most eagerly awaited by all of us. The best energies of the bacteriological and the surgical world cannot be devoted to a worthier object. But the future of bacteriology is, and ever will be, in the

<sup>1</sup> An Address delivered October 16, 1896, at the Commemoration of the Fiftieth Anniversary of the First Public Demonstration of Surgical Anesthesia.

THE FIRST PUBLIC DEMONSTRATION OF ETHERIZATION AT THE MASSACHUSETTS  
GENERAL HOSPITAL.



Dr. W. T. G. Morton.  
A. A. Gould, M.D. J. C. Warren, M.D. Samuel Parkman, M.D. S. D. Townsend, M.D.  
H. J. Bigelow, M.D. J. Mason Warren, M.D. George Hayward, M.D.



OLD AMPHITHEATRE, MASSACHUSETTS GENERAL HOSPITAL, AS IT WAS IN 1846.



hands of the most brilliant men, and surgery is destined to achieve many of its greatest triumphs through the aid of this ever-growing army of invaluable co-workers. With their help will the aseptic making and treating of wounds be brought to a far higher state of perfection than even the elevated one of the present day, and the exact reasons for disturbances in wound-healing, some of which are still but partially understood, will become part of the knowledge of every true surgeon.

The possibilities for discoveries of enormous value to both the theory and the practice of surgery, through more perfect study of the blood, are certainly very large, and are already foreshadowed by what has been so recently learned in regard to the blood-corpuscles and the organisms of disease which invade and develop in the blood current. We may confidently expect through this means a very exact, and, what is of the utmost importance, a very *early* diagnosis, in many surgical disorders, which we now first appreciate at a stage too late for efficient treatment.

When one considers the very great value of the recent addition to our resources, the infusion into the blood-vessels of hot saline solution, which has so beautifully supplanted the difficult and dangerous process of blood transfusion, one grows impatient for the day when, at the same moment disease shall be drained from the body through one opened vessel, and life and health poured in through another. Some of us will see the day when death as a result of hemorrhage will be always avoidable.

In spite of the large contributions that have been made by scientific workers during the last few years, it may fairly be said that we have been living in an age of operative surgery, the growth of which has excited the interest and admiration of all classes of men.

The public at large, and all branches of our profession, have become deeply infected with the idea that there are almost no limits to what can be done in the cure of disease by a skilful surgeon; and the belief is much too widespread that almost any professional man, with a little knowledge of antiseptics, may properly practise surgery. This exaggerated feeling of confidence is the natural sequel to the discovery of asepsis, which, with its incalculable benefits, has scattered some harm. Every region and organ of the human body has been investigated by the operating surgeon, and far be it from me to say that this has not been wise and necessary. Conclusions cannot precede experience; and it has required courage, hope, and even blind faith, to explore and learn what we may accept, and what we *must* discard.

The operating surgeon of the future will have a most important and delightful task. Proud of his ability to do any operation, and to secure a perfect wound-healing with unfailing regularity, he will know when to withhold his hand. He will sacrifice his ambition to multiply the number of cases he has operated upon, and will devote his energies to increasing only the number of those he has actually cured of disease. He will know better than we do who are the actually moribund, and he will leave them untouched in the hands of the priest.

He will not be tempted by the plea that the patient must die as he is, and that therefore he should rightly be operated upon. He will not attempt to cure with the knife the poor little microcephalic child or the

advanced case of carcinoma of the stomach, uterus, or larynx. Our knowledge, acquired by much labor and sacrifice, will be his at the outset; and the errors, which we have made through over-enthusiasm, will excite not his contempt, but his gratitude.

He will have at his disposal the large experience of the surgeons of to-day, and, unhampered by the views held in the pre-antiseptic era, he will draw conclusions and deduce principles sounder and clearer than our own.

We may confidently look forward to vastly improved diagnosis of surgical disease, more especially such as will enable the surgeon to attack pathological processes in their *incipiency*. Especially in cases of malignant disease is there much to be desired in this direction. Great advance has been already made in the wide removal of infected areas, and of the channels through which malignant disease is carried to other parts of the body. How much more efficient must such measures be when applied at the very beginning of a cancer! Perhaps we are justified in looking forward to such a development of the Röntgen light, that the surgeon will be able to appreciate the location and character of all neoplasms while they are still young enough to be radically curable by operation.

The future surgeon will enjoy a much closer and more intimate relation with his brother the physician than has ever existed between them before, for what what belongs to medicine and can be cured by surgery only, will be far better appreciated by both surgeon and physician than it is to-day.

Few operations will then be done as a last resort, for the only remedy that can cure in a given case will be eagerly demanded by the one, and willingly applied by the other, at the beginning of disease.

Above all, Mr. President, will the surgery of the future attract to its enthusiastic study and practice finer and finer men, in whose hands we may safely leave the development of our science. A single glance at the faces of the students who collect daily in your operating-room will show you what a change has occurred in the last twenty-five years. For this, too, we must ever be grateful to anesthesia, which, in removing the torture of surgery has robbed it of what repelled many sensitive natures. And the science of asepsis, by rendering complete success in surgical work possible, will excite the most devoted enthusiasm from many scientific men, who soon would have become sick at heart over the failures of former times. What more attractive opportunity could possibly exist than will be offered by surgery to the well-educated, refined, able and ambitious student? Through the vast experience of the recent past he will find many of the coarser problems already solved, and those that remain will stimulate him by their difficulty. He will be an accomplished anatomist and a physiologist; he will study medicine and pathology first, and then general surgery. If he specializes his practice, he will do so only after a large general experience; and he will borrow from every science all that can contribute to the perfecting of his work.

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DR. SAMUEL FENWICK has resigned his post as visiting physician to the London Hospital, after an incumbency as physician and assistant physician of twenty-eight years. He has been appointed to the consulting staff.

## Poem.

THE BIRTH AND DEATH OF PAIN.<sup>1</sup>

BY S. WEIR MITCHELL, M.D.

FORGIVE a moment, if a friend's regret,  
 Delay the task your honoring kindness set.  
 I miss one face to all men ever dear;  
 I miss one voice that all men loved to hear.  
 How glad were I to sit with you apart  
 Could the dead master use his higher art  
 To lift on wings of ever lightsome mirth  
 The burdened muse above the dust of earth,  
 To stamp with jests the heavy ore of thought,  
 To give a day, with proud remembrance fraught,  
 The vital pathos of that Holmes-spun art  
 Which knew so well to reach the common heart.  
 Alas! for me, for you, that fatal hour!  
 Gone is the master! Ah! not mine the power  
 To gild with jests, that almost win a tear,  
 The thronging memories that are with us here.

The Birth of Pain! Let centuries roll away;  
 Come back with me to nature's primal day.  
 What mighty forces pledged the dust to life!  
 What awful will decreed its silent strife!  
 Till through vast ages rose on hill and plain,  
 Life's saddest voice, the birthright wail of pain.  
 The keener sense, and ever growing mind,  
 Served but to add a torment twice refined,  
 As life, more tender, as it grew more sweet,  
 The cruel links of sorrow found complete  
 When yearning love to conscious pity grown  
 Felt the mad pain thrills, that were not its own.

What will implacable, beyond our ken,  
 Set this stern fiat for the tribes of men!  
 This, none shall 'scape, who share our human fates:  
 One stern democracy of anguish waits  
 By poor men's cots — within the rich man's gates.  
 What purpose hath it? Nay, thy quest is vain:  
 Earth hath no answer: If the baffled brain  
 Cries, 'tis to warn, to punish — Ah, refrain!  
 When writhes the child, beneath the surgeon's hand,  
 What soul shall hope that pain to understand?  
 Lo! Science falters o'er the hopeless task,  
 And Love and Faith in vain an answer ask,  
 When thrilling nerves demand what good is wrought  
 Where torture clogs the very source of thought.

Lo! Mercy ever broadening down the years  
 Seeks but to count a lessening sum of tears.  
 The rack is gone — the torture chamber lies  
 A sorry show for shuddering tourist eyes.  
 How useless pain, both Church and State have learned,  
 Since the last witch, or patient martyr burned.  
 Yet still, forever, he who strove to gain  
 By swift despatch a shorter lease for pain  
 Saw the grim theatre, and 'neath his knife  
 Felt the keen torture, in the quivering life.  
 A word for him who, silent, grave, serene,  
 The thought-stirred master of that tragic scene,  
 Recorded pity through the hand of skill,  
 Heard not a cry, but, ever conscious, still

In mercy merciless, swift, bold, intent,  
 Felt the slow moments that in torture went  
 While 'neath his touch, as none to-day has seen,  
 In anguish shook life's agonized machine.  
 The task is o'er; the precious blood is stayed;  
 But double price the hour of tension paid.  
 A pitying hand is on the sufferer's brow —  
 "Thank God 'tis over." Few who face me now  
 Recall this memory. Let the curtain fall,  
 Far gladder days shall know this storied hall!

Though Science patient as the fruitful years,  
 Still taught our art to close some fount of tears,  
 Yet who that served this sacred home of pain  
 Could e'er have dreamed one scarce-imagined gain,  
 Or hoped a day would bring his fearful art  
 No need to steel the ever kindly heart.

So fled the years! while haply here or there  
 Some trust delusive left the old despair;  
 Some comet thought — flashed fitful through the night,  
 No lasting record, and no constant light:  
 Then radiant morning broke, and ampler hope  
 To art and science gave illumined scope.

What Angel bore the Christ-like gift inspired!  
 What love divine with noblest courage fired  
 One eager soul that paid in bitter tears  
 For the glad helping of unnumbered fears,  
 From the strange record of creation tore  
 The sentence sad, each sorrowing mother bore,  
 Struck from the roll of pangs one awful sum,  
 Made pain a dream, and suffering gently dumb!

Whatever triumphs still shall hold the mind,  
 Whatever gift shall yet enrich mankind,  
 Ah! here, no hour shall strike through all the years,  
 No hour as sweet, as when hope, doubt and fears,  
 'Mid deepening stillness, watched one eager brain,  
 With God-like will, decree the Death of Pain.

How did we thank him? Ah! no joy-bells rang,  
 No pæans greeted, and no poet sang,  
 No cannon thundered, from the guarded strand  
 This mighty victory to a grateful land!  
 We took the gift, so humbly, simply given,  
 And coldly selfish — left our debt to Heaven.  
 How shall we thank him? Hush! A gladder hour  
 Has struck for him; a wiser, juster power  
 Shall know full well how fitly to reward  
 The generous soul, that found the world so hard.

Oh! fruitful Mother — you, whose thronging states,  
 Shall deal not vainly with man's changing fates,  
 Of freeborn thought, or war's heroic deeds  
 Much have your proud hands given, but nought exceeds  
 This heaven-sent answer to the cry of prayer,  
 This priceless gift which all mankind may share.

A solemn hour for such as gravely pause  
 To note the process of creation's laws!  
 Ah, surely, He, whose dark, unfathomed Mind  
 With prescient thought, the scheme of life designed,  
 Who bade His highest creature slowly rise,  
 Spurred by sad needs, and lured by many a prize,  
 Saw, with a God's pure joy, His ripening plan,  
 His highest mercy brought by man to man.

<sup>1</sup> Read October 16, 1896, at the Commemoration of the Fiftieth Anniversary of the First Public Demonstration of Surgical Anæsthesia.

## Reports of Societies.

### THE MASSACHUSETTS MEDICAL SOCIETY.

#### COUNCILLORS' MEETING.

A STATED meeting was held at the Medical Library, Boston, on Wednesday, October 7, 1896. The meeting was called to order at 11 A. M., the President, DR. HENRY P. WALCOTT, in the chair. Seventy-three Councillors were present.

The following were appointed delegates to other State Medical Societies:

*Vermont.* — Drs. E. A. Sawyer, of Gardner; F. H. Thompson, of Fitchburg.

*New York.* — Drs. S. D. Presbrey, of Taunton; G. E. Francis, of Worcester.

*New York State Medical Association.* — Drs. F. K. Paddock, of Pittsfield; J. T. G. Nichols, of Cambridge.

The Committee on Membership and Finance recommended, and it was *Voted*, That the sum of \$1,000 be appropriated from the balance of funds in the Society's treasury as an extra dividend to be distributed among the several District Societies.

The same committee, to whom was referred at the last meeting the motion to reduce the annual assessment from five to three dollars, reported unanimously that it is inexpedient to make the change suggested, and recommended that the subject be indefinitely postponed.

After discussion it was *Voted*, That the recommendation of the Committee be adopted.

DR. HARVEY, for the Committee appointed to examine and report upon the Digest, also to consider what changes, if any, in the By-Laws are necessary that they may conform to the existing statutes relating to the Society, reported a compilation of the statutes now in force relating to the Society which had been drafted by legal counsel and also a code of By-Laws.

The latter, he stated, conforms to the statutes in every particular, excepting the provisions relating to the time the Councillors and Censors shall enter upon the duties of their office, and the time when the Councillors shall elect the officers of the Society. It is important that these provisions be retained. He therefore moved, and it was *Voted*, That the Committee on State and National Legislation be instructed to petition the Legislature for a repeal of so much of Section 1, Chapter 20, of the Acts of 1850 as relates to the time the Councillors and Censors shall enter upon the duties of their office; also for a repeal of so much of Section 3, Chapter 123, of the Acts of 1802 as relates to the time the Councillors shall elect the officers of the Society.

The Code of By-Laws, somewhat amended from the printed copy that had been sent out by the Committee, was considered in detail, and after slight additional changes by members of the Council it was *Voted*, That the report of the Committee, as amended, be referred by the Councillors to the Society, with the recommendation that it be adopted.

#### ADJOURNED MEETING.

An adjourned meeting of the Society was held at the Medical Library, Boston, on Wednesday, October 7, 1896, at 1 o'clock P. M., the President, DR. HENRY P. WALCOTT, in the chair.

The vote of the Councillors passed at their meeting held this day, recommending to the Society the adoption of the report as amended by the Committee on Compilation of the Statutes and on Revision of the By-Laws was presented.

*Voted*, To accept the recommendation of the Councillors, and to adopt the Code of By-Laws referred to as the By-Laws of The Massachusetts Medical Society.

Among the provisions of the new code of By-Laws is one providing that hereafter there shall be only two meetings in each year of the several Boards of Censors for the examination of Candidates for Fellowship in the Society. They are to meet at 2 P. M. on the second Thursday in November and in May.

### AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTY-SECOND ANNUAL MEETING, PHILADELPHIA, PA., JUNE 3, 4, 5, 1896.

(Concluded from No. 15, p. 369.)

A CASE OF CEREBRAL ABSCESS SITUATED AT THE POSTERIOR PART OF THE EXTERNAL CAPSULE (INVOLVING THE MEDULLARY SUBSTANCE OF THE FIRST TEMPORAL CONVOLUTION, ALSO THE POSTERIOR PART OF THE LENTICULAR NUCLEUS, AND EXTENDING INTO THE SUBTHALAMIC REGION), WITH SOME CONSIDERATIONS IN REGARD TO THE CONSTITUTION OF THE EXTERNAL BUNDLE OF FIBRES IN THE CEREBRAL PEDUNCLE.

DR. CHARLES K. MILLS and DR. WM. G. SPILLER, of Philadelphia, presented a communication with the above title.

The patient had never had earache, but had suffered during the summer of 1895 from severe headache.

On December 20, 1895, he became unconscious and had three general convulsions which resembled those of epilepsy. It was noticed that he was partially paralyzed on the right side and that he could not talk properly. His condition later improved very much.

On January 29, 1896, he had another attack of partial unconsciousness without convulsions, but with aphasia and a decided paralysis.

On admission to the hospital he was in a condition of stupor. He did not speak when addressed, and had almost total right-sided paralysis, incontinence of urine and feces, and entire loss of pain and touch sense over the paralyzed side. He was found to have right homonymous hemianopsia, and double papillitis, most marked in the left eye. Death occurred February 26, 1896. There was no evidence at any time of middle-ear disease.

At the autopsy an abscess was found in the left hemisphere, just above the level of the callosum. Both tympanic membranes were normal. Microscopic examination of the pus from the cerebral abscess revealed only the ordinary staphylococcus pyogenes aureus.

The occurrence of epileptiform convulsions at the time of the first attack of unconsciousness, probably due to irritation of the motor fibres within the internal capsule, is worthy of note as an instance of the difficulty in diagnosing cortical lesions. It is not known in what portion of the body these convulsions began. The diagnosis was made of some morbid



process located at the posterior part of the internal capsule involving the optic radiations and causing pressure.

The abscess occupied the posterior part of the external capsule, a portion of the lenticular nucleus, and extended downwards into the subthalamic region, but to all appearances had not cut the fibres of the optic radiations nor those of the internal capsule. The loss of function in these tracts was probably due to pressure. The white matter of the first temporal gyrus was almost entirely destroyed and fibres from the upper anterior part of the second temporal were also cut. As the cavity was very near the periphery of the first temporal convolution it would not have been difficult for the surgeon to have emptied it.

Hearing was probably not seriously affected, although word deafness appeared to be present.

In view of the frequency of cerebral abscess after suppurative processes in the lungs, it may be added that merely spots of catarrhal pneumonia were found in both lungs at the autopsy.

No degeneration was noticed anywhere in the motor tract. At all parts a good half-inch of sound tissue existed at the posterior part of the internal capsule in the area corresponding to the optic radiations and the tract of Türck. It has been claimed by Dejerine that fibres arise in the temporal lobe (especially in the second and third convolutions) pass inwards below the putamen, join the posterior part of the internal capsule in the subthalamic region and then form approximately the external fifth of the cerebral peduncle. No fibres from the occipital lobe are found in this lateral bundle of the crus. Dejerine has found this tract of Türck degenerated in six cases of lesions involving the middle and inferior part of the temporal lobe.

In our case the fibres from the first temporal gyrus were almost entirely destroyed, as well as those from the upper anterior part of the second temporal convolution; and as no degeneration has been found within the lateral bundle of the peduncle by the method of Marchi, 68 days after the first attack and 28 days after the second (certainly a period sufficiently long for this method), we consider that the case demonstrates the fact that no fibres from the first temporal and the upper anterior part of the second temporal gyrus, including a portion of the upper middle of this gyrus, enter the fasciculus of Türck. This, of course, does not render impossible or improbable the origin of such fibres in the lower anterior and the whole of the posterior part of the second temporal, and in the whole of the third temporal gyrus. The fibres which enter the first temporal gyrus are probably connected with the sense of hearing, and being sensory probably do not degenerate downwards, which accounts for the absence of secondary degeneration in the peduncle.

DR. B. SACHS and DR. A. G. GERSTER, of New York, read a paper on

THE SURGICAL TREATMENT OF FOCAL EPILEPSY: A CRITICAL ANALYSIS OF THE RESULT IN NINETEEN CASES.

For the last six years the authors have attempted to study in a thoroughly unbiased fashion the results of the various surgical procedures for the cure or relief of partial epilepsies. They include, not only cases due to traumatic injury, but those associated with infantile cerebral palsies or some other acute

cerebral condition. Their list of cases does not, however, include those in which the epilepsy is due to tumor. Before detailing their own cases the authors lay special stress upon the unsatisfactory results to be gained by a mere statistical inquiry of the cases reported in literature. The majority of these are reported either too early, or the cases are not properly analyzed. It is their opinion that the results after operative procedures for the cure of epilepsy should not be considered unless at least a period of one year has elapsed since the time of the operation. But they also state that it is not well to exclude all cases in which the attacks return soon after the operation, for in some of these decided improvement sets in later on.

A number of authors have condemned every surgical procedure without in the least attempting to account for the failure to cure or to improve the patient. Thus, the mere fact of an addiction to alcohol is of itself sufficient to explain the failure to cure an epilepsy by operative procedure. The epilepsy which is developed after a traumatic injury or in association with infantile cerebral palsies is evidently due to secondary degeneration of the association fibres in the hemispheres, and this degeneration originates from the focus of diseased tissue, and is generally developed in the course of a year or two. In this same period of time the epilepsy often appears after the initial injury. Horsley's proposition to excise the diseased tissue and thus prevent the epilepsy is considered to be based upon sound physiological principles, but in practice the results have not been as satisfactory as was expected, and the authors attribute this chiefly to the fact, that after an epilepsy has lasted for a number of years, and after secondary degeneration has been fully established, the excision of the original focus of disease cannot be expected to do good. It is important therefore, if possible, to prevent the formation of secondary degeneration in the hemispheres by excision of the diseased tissues, or to prevent epilepsy by early surgical procedures in the case of depression of the skull and other cranial injuries. The authors' 19 cases have been minutely tabulated with reference to the origin of the trouble, the interval elapsing between the traumatic injury or beginning of the epilepsy, and the operation. The analysis of the 19 cases shows that three were positively cured, two greatly improved, three somewhat improved, while in 11 cases there was absolutely no improvement. A study of all the cases shows that those in which there has been improvement the operation was done within a period of two years after the traumatic injury or the beginning of the disease. The same is true of those cases that were greatly improved but not cured, the failure to cure in these cases being ascribed to other causes, such as alcoholism or want of proper care after operation. The authors' views and experiences are summed up in the following conclusions:

(1) That surgical interference is advisable in those cases of partial epilepsy in which not more than one, or at the utmost two years have elapsed since the traumatic injury or beginning of the disease which has given rise to the convulsive seizures.

(2) In case of depression or other injury of the skull surgical interference is warranted even though a number of years have elapsed. But the prospect of recovery is brighter the shorter the period of time since the injury.

(3) Simple trephining may prove sufficient for a

number of cases, and particularly in those cases in which there is an injury to the skull, or in which a cystic condition is the main cause of the epilepsy.

(4) Excision of cortical tissue is advisable if epilepsy has lasted but a short time, and if the symptoms point to a strictly circumscribed focus of disease.

(5) Since such cortical lesions are often of a microscopical character, excision should be practised, even if the tissue appears to be perfectly normal at the time of operation, but the greatest care should be exercised in order to make sure that the proper area is removed.

(6) Surgical interference of the cure of epilepsy associated with infantile cerebral palsies may be attempted, particularly if too long an interval has not elapsed since the beginning of the palsy.

(7) In cases of epilepsy of long standing in which there is in all probability a widespread degeneration of the associated fibres, every surgical procedure is absolutely useless.

**A CONTRIBUTION TO THE PATHOLOGY OF EPILEPSY,  
AND A RÉSUMÉ OF THE UTILITY OF OPERATION  
IN EPILEPSY,**

by DR. JOSEPH COLLINS and DR. A. WIENER, of New York.

This was a report of two cases in which a portion of the cortex was excised. The first case was a young man, twenty years of age, with the usual symptoms of focal epilepsy, the patient having had but three attacks. The cortical area for the right hand was cut out. Microscopical examination of the tissue showed chronic meningo-encephalitis, obliterative changes in the blood-vessels, changes in the ganglion cells of a degenerative character, and the formation of neuroglia tissue in the softened area. The patient was operated upon a year ago, and has since been free from epileptic attacks. The second case was a married woman, thirty years of age, who had epilepsy for six years, of a focal character at first which later became general. A similar operation was performed, and the cortex showed unmistakable pathological changes.

DR. W. W. KEEN, of Philadelphia, and DR. H. M. THOMAS, of Baltimore, reported a case of

**A LARGE TUMOR REMOVED FROM THE BRAIN, WITH  
WIDE OPENING OF THE LATERAL VENTRICLE.**

The patient, a young man of nineteen, with an excellent family and personal history, and no history of accident, in December, 1895, had an attack of intense headache and vomiting, but without optic neuritis. The latter symptom followed in the middle of January, with later blindness in the right eye, slight vision remaining in the left; slight protrusion of left eyeball; pupils equal and normal, small. Hearing and taste unaffected. Paresis of the lower right face. Sensation and the muscles of mastication unaffected. No muscular weakness in either the arms or legs; but there was a good deal of muscular restlessness of the right hand, persisting even during sleep. Reflexes present. Mental condition poor. He was dull and apathetic, and sometimes slightly wandering mentally. After the early headache and vomiting, neither of these was a marked feature. There was slight aphasia. Drs. Osler and Starr saw the patient with Dr. Thomas and the conclusion reached that it was a tumor in the left frontal lobe, most likely at the base of the second frontal convolution and probably subcortical.

On May 10th Dr. Keen operated. The tumor presented through a rupture of the cortex at the base of the second frontal convolution, as had been diagnosed. The tumor was easily scooped out by the fingers. The lateral ventricle was then seen to be widely open. After the operation there was no increase of the paralysis. In two weeks the patient had entirely recovered. The tumor was 7.5 cm. long, 5.5 cm. broad and 4 cm. deep, and weighed  $2\frac{1}{2}$  oz. It was a hard, non-infiltrating sarcoma.

All of the foregoing papers were discussed collectively.

DR. A. G. GERSTER, of New York, confined his remarks principally to craniotomy in reference to cases of epilepsy. He spoke of the dangers in the use of the trephine and chisel, and recommended the bone-flap operation, as introduced by Krause and performed by aid of the chisel and rongeur. He considered all of these methods unsatisfactory and too slow. Incidentally, he exhibited the electrical saw of Krause.

The greatest danger in cranial operations is due to hemorrhage on account of the prolonged time of the operation; therefore any apparatus is desirable that will enable the surgeon to work with rapidity and safety. He presented an American apparatus based on the principles of the dental drill, and said he had used the instrument with satisfaction in four cases.

DR. M. A. STARR had seen 24 cases operated upon, but none were cured. He has never recommended, and will not recommend, operation in idiopathic epilepsy. He has always had the advantage of a skilful operator. These operations should only be done by surgeons who have special experience in this line of surgery, and not by the general surgeon. The excision of cysts is very unsatisfactory, as death on the table has often followed. He had seen cases operated on very early in infantile epilepsy due to meningeal hemorrhage, without favorable result. When brain tissue, either scar tissue or normal tissue, has been excised, the attacks have also recurred. Of 11 cases of brain abscess operated upon, three recovered. All of these were seen at the various hospitals, and were usually subsequent to ear disease. He could not agree with Macewen's view as to the simplicity of diagnosis of cerebral abscess. He thought the day of trephining was over. The last operation witnessed was done in fourteen and one-half minutes by chisels and gouges.

DR. W. W. KEEN spoke at length on the report of the case presented conjointly by him and Dr. Thomas, and considered the prognosis favorable. The removal of large tumors seems to be less dangerous to life than small ones, as in the search for the latter we are likely to damage the brain extensively. It is only within the last ten years that cranial surgery really began. His experience had been moderately large. He agreed with Dr. Starr as he (Dr. Keen) had not seen a single case of epilepsy cured by operation. He would be unwilling to accept even two years but thought three years preferable as the limit for disappearance of attacks after operation. He had, however, seen considerable amelioration, and therefore thought it worth while to operate in certain cases. He would not operate in cases of general idiopathic epilepsy. The sooner the operation is done after the injury or the beginning of epilepsy, the more favorable the prognosis. After epilepsy has existed five or six years he would hesitate in operating. He concluded that we must have twenty years of experience in cerebral sur-

gery before this matter can be satisfactorily settled by the profession.

DR. J. H. LLOYD presented a patient with right hemiplegia and contracture, unilateral sweating, and flushing of the face and dilation of the pupil, and looked upon the latter symptoms as due to an irritative lesion of the thalamus.

### THIRD DAY.

#### EDEMA OF THE EYELIDS IN GRAVES' DISEASE: THYROIDECTOMY.

DR. J. ARTHUR BOOTH, of New York, read a paper on this subject and exhibited the patient who had been operated upon. He drew the following conclusions:

(1) Slight degrees of edema situated in the extremities, are of common occurrence in Graves' disease, but this symptom limited to the eyelids is very seldom seen.

(2) In distinguishing these various forms of swelling it is necessary to be guided by the position and degree. If situated only in the face and upper limbs or if unsymmetrical, it is entirely of nervous origin, and it may be so if it affects the feet, but it is only slight and temporary.

(3) These dropsies are evidently of vaso-motor origin, and are probably due to a paralysis of vaso-constrictor nerves, manifestations of peripheral neuritis.

(4) Limited to the eyelids, it may be due to a paresis of the orbicularis. If this be true, however, it is strange that we do not meet with it in other palsies of this muscle.

(5) Thyroidectomy, carefully performed and by one cognizant of the occasional complications, is not such a dangerous operation as is generally believed.

(6) From operative interference in Graves' disease we may expect an improvement in the rapidity of the pulse, cessation of the disturbing attacks of palpitation, and cure of many of the subjective phenomena.

DR. STARR expressed the opinion that operations in these cases were not always safe, the percentage of death being 12 out of 187 cases. Sudden deaths have occurred soon after the operation. They were not due to surgical shock but to the absorption of thyroid juice during the operation, thus overwhelming the system by its toxic properties. The operation of thyroidectomy should not be done indiscriminately.

#### THE NATURE OF NEURASTHENIA AND ITS RELATION TO MORBID FEARS AND IMPERATIVE IDEAS.<sup>1</sup>

This was the title of a paper read by DR. PHILIP COOMBS KNAPP, of Boston.

This study was based on 100 cases seen in hospital practice and 50 cases seen in private practice.

This paper was discussed by DRS. DILLER, WILDER and SPITZKA.

#### A FORM OF MENTAL DISEASE CLINICALLY RESEMBLING CERTAIN STAGES OF PARETIC DEMENTIA,

by DR. E. C. SPITZKA, of New York.

The reader had found, in a long experience, 16 cases of an affection most important to differentiate, as the termination was in recovery. So close was their resemblance *pro tem* to paretic dementia, that in every instance that, or the equivocal diagnosis of "softening," had been made. The writer himself had at

Will be published in a later number of the Journal.

first regarded them as appertaining to Voisin's atheromatous insanity or to his own group of primary mental deterioration. The speech disturbance was peculiar, being more like that of febrile delirium than that of a toxic or organic anarthria. By concentrating his attention the patient could correct his errors, and it was the longest words and those of most difficult enunciation which he pronounced as readily as most persons of average health and education. Repeated trials rapidly fatigue him, and while no real paretic speech could thus be provoked, he is apt to say "There is rumthing soddin in the den of statemark" as to quote the passage correctly. When an expression fails him, he displays considerable skill in circumscribing his meaning by the use of metaphorical or parallel expressions. A similar feature is found in that similar condition — bromism.

The earliest case of which he had a record occurred in October, 1879, and was recorded by him as one of chronic confusional insanity, with a reservation as to probable atheromatous sequelæ. The patient exhibited a typical confusional delirium. At his age (sixty-four) the arcus senilis, the tortuous temporal arteries and the characteristic pulse were suggestive. He was promptly committed to an asylum on Dr. Spitzka's advice. In February, 1881, he appeared in the doctor's office, and had made a recovery. This patient was alive and in good health three years ago. Among the etiological factors, syphilis and alcohol could be excluded. Grippe, malaria, railway injuries, dysentery and chronic bronchitis played a predisposing rôle. Recovery occurred in from four to fourteen months. The ages of his patients ranged from forty-eight to seventy-one years. He had found the last 11 cases recorded among males exclusively, not quite two per cent. of a group of cases including 585 paretic dementas, 41 of atheromatous mental trouble and 28 of primary mental deterioration.

#### NERVE DISTURBANCE FROM INDIGESTION,

by DR. HENRY S. UPSON, of Cleveland.

The paper dealt with the nervous diseases arising from intestinal indigestion. Three cases were given, one of the nervous phenomena arising in typhoid fever, in brief as follows: A young man of twenty-four was seen at the end of the first week of typhoid. Besides the typical temperature curves, enlarged spleen, nose-bleed, backache and other symptoms, he was even thus early somewhat delirious during the day and quite sleepless at night. Thymol and hydrochloric acid failed to relieve; one-sixth grain morphine with twenty grains of Dover's powder did not produce sleep; and within a week there were coma vigil and subultus tendinum. The bowels had been throughout very constipated. During the third week of the disease sleep followed very promptly the clearing of the bowels by calomel, an eighth-grain every hour during the day and every two hours during the night. The second case was of a merchant sixty years old. He was seen two weeks after recovery from a severe attack of dysentery. The diarrhea had been checked by the free use of opium. He was in a state of what may be termed restless melancholia. He was very nervous, cried easily, slept almost none. There was rumbling and moderate pain in the bowels, with occasional somewhat offensive movements. The patient was given strontium salicylate and calomel, and was restricted to a milk diet. He began to sleep fairly

well at night, was contented to remain in the hospital, and his extreme pallor and fairly marked anemia with his other symptoms improved slowly but steadily. The third patient showed a similar train of symptoms after a mental shock. She gradually developed a condition of depression, nervous irritability and sleeplessness, after hearing suddenly that her husband had accidentally shot himself, and in spite of the fact that he made a good recovery. She was first seen five months after this event. In addition to the symptoms already given, she had rumbling and some tenderness of the bowels; but there was neither diarrhea nor marked constipation. Her condition improved promptly on a milk diet and one of the salicylates.

Conclusions were not warranted from so few cases, but the author believed from a somewhat extended experience in these cases that the type of nerve disturbance found in typhoid, and in connection with and after dysentery and diarrhea, is found in intestinal indigestion without the intervention of these disorders, and may easily be confounded with mild melancholia and neurasthenia; it presents many points of similarity to nicotine poisoning. It must be carefully differentiated from nerve disorders arising by reflex. It is amenable to treatment, which should *not* consist exclusively in the administration of an antiseptic.

DR. J. H. LLOYD exhibited the photograph of a patient with

#### PARALYSIS OF THE RIGHT EXTERNAL RECTUS, AND DIABETES INSIPIDUS

coming on abruptly after an apoplectiform attack.

#### REPORT OF THE COMMITTEE ON NEURONYMY.

DR. B. G. WILDER presented the report. Among the recommendations of the committee were:

(1) That the adjectives *dorsal* and *ventral* be employed in place of *posterior* and *anterior* as commonly used in human anatomy and in place of *upper* and *lower* as sometimes used in comparative anatomy.

(2) That the cornua of the spinal cord and the spinal nerve roots be designated as *dorsal* and *ventral* rather than as a *posterior* and *anterior*.

(3) That the costiferous vertebræ be called *thoracic* rather than *dorsal*.

(4) That the hippocampus minor be called *calcar*; the hippocampus major, *hippocampus*; the pons Varoli, *pons*; the insula Reilii, *insula*; pia mater and dura mater respectively *pia* and *dura*.

(5) That, other things being equal, *mononyms* (single-word terms) be preferred to *polyonyms* (terms consisting of two or more words).

The report was signed by H. H. Donaldson, C. K. Mills, A. C. Sequin, E. C. Spitzka, and B. G. Wilder, Chairman.

#### TOXICOSES OF THE NERVOUS SYSTEM AS A CAUSE OF PULMONARY CONSUMPTION,

by DR. THOS. J. MAYS, of Philadelphia.

The fundamental idea in this paper was that irritation of the nervous system, and especially of the pneumogastric nerves, leads to some form of pulmonary disease, and frequently to pulmonary consumption. This is confirmed by quotations made from Chénau, Holland, Copland, Laycock, Allbutt and Clouston. Clinical proofs and post-mortem results which favor this theory were also adduced. The author claimed that there are a number of poisons generated within

the body, and also introduced from without, which intoxicate the nervous system and become a prolific source of pulmonary consumption. These poisons are alcohol, syphilis, mercury, lead, typhoid fever, diphtheria, measles, whooping-cough, mumps, influenza, cerebro-spinal meningitis, beri-beri, and rheumatism. Of these poisons, alcohol is the most prone to bring about pulmonary mischief through the medium of the nervous system, and a number of examples, giving post-mortem proof of this were cited. Syphilis and most of the other poisons mentioned were discussed in the same manner, and were shown to have the same ultimate effects in many instances. While all these poisons bring on pulmonary disorder by undermining the nervous system, the chronicity or the acuteness of the former process depend in a large measure (1) on the virulence of the poison, (2) on the amount and frequency with which it is introduced, (3) on the persistency of its action, and (4) on the facility or difficulty with which it is excreted by the body. They all vary in this respect. Alcohol is quickly eliminated, but its harmfulness depends on its being taken frequently and for long periods. A single infection of syphilis saturates the body for a long time. Mercury and lead enter the body gradually and leave it exceedingly slowly. The poisons of whooping-cough, influenza and cerebro-spinal meningitis having a selective affinity for the pulmonary nerves, are liable to be followed by a more speedy disturbance in the lungs than is the case with those of typhoid fever, diphtheria, measles and mumps. Uric acid, being a normal constituent of the body, only becomes harmful when present in persistent excessive quantity.

#### THE AFTER-CARE OF THE INSANE.

This was the preliminary report of a Committee composed of Dr. H. L. Stedman, of Boston, Dr. F. X. Dercum, of Philadelphia, and Dr. C. L. Dana, of New York, favoring the establishment of convalescent hospitals for the insane.

#### NEWSPAPER RABIES.

This was the title of a paper by DR. IRVING C. ROSSE, of Washington, D. C.

He referred to the frequency with which hydrophobia was mentioned by the public press at this season. Late papers on the subject show that there is still a chaotic knowledge of this badly elucidated affection, concerning which surgeons and neurologists are by no means agreed. From examining a great mass of literature relative to rabies, while working on the Index Catalogue of the Surgeon-General's Office, Dr. Rosse stated that he came across hundreds of references to hydrophobia of a spurious character, and that these references date from the Homeric era to that of Cellius Aurelius. Much other literature was also cited, showing that in by-gone times there were sceptics as to the existence of such a pathological entity as hydrophobia. As an extensive traveller in parts of the world where this disease is supposed to occur geographically, he had never seen a case, nor had he any authentic knowledge of one from personal observation. The Secretary of the Japanese Legation in Washington says he has never known of a case in Japan, and that in Corea, having more dogs than any other country in the world, hydrophobia is unheard of. A few Italian and French physicians and the newspapers appear to be the chief contributors at

the present time. The reader thought that in view of the uncertain state of knowledge of the subject, that the newspapers are hardly to blame for reckless accounts of hydrophobia, since they only hold the mirror up to nature, and, reflecting public sentiment, give us, so to speak, a radiograph of what is passing in the minds of medical men.

DR. F. W. LANGDON, of Cincinnati, presented a paper entitled

**EPILEPSY AND OTHER CONVULSIVE DISEASES: A STUDY IN NEURO-DYNAMICS.**

His conclusions were —

(1) That epilepsy, the choreas, and probably most of the convulsive disorders are the dynamical expression of an inhibitory insufficiency; not indications of over-production of nerve energy nor "explosions" due to a "molecular instability" *per se*.

(2) That the cause of this inhibitory insufficiency is to be sought for in the end brushes of the collateral processes of various cortical neurons, the situation varying with the "type" of the disease, whether sensory, psychic or motor.

(3) That the defect consists most probably in a "structural incompleteness" (small capacity, defective insulation, imperfect contact) or a "numerical deficiency," or both, in the collateral processes of the neurons referred to.

(4) Defective collaterals may favor occurrences of convulsions in two ways: (a) by impairing connection with other neurons — inhibitory, storage, etc.; (b) by increased resistance to "overflow currents" causing temporary overcharging of motor axis-cylinders.

This conception of the anatomico-dynamic basis of convulsive phenomena I would call "collateral theory." On this basis cases of epilepsy are classed under three groups, each of which represents important differences as regards prognosis and treatment:

(1) Primary or developmental type, comprising the "idiopathic" cases under twenty years of age. In these, the younger the subject and the better the heredity and environment, the better the prognosis under intelligent treatment. Ultimate result depended on the possibility of promoting further and equable development of collateral communications with inhibitory mechanisms.

(2) The "accidental" forms. These are due to trauma, syphilis, lead, toxins, etc. The prognosis here varying with the longer or shorter duration and with the possibility of removal of the cause is always favorable so long as permanent structural changes in collaterals and in inhibitory mechanisms have not occurred.

(3) The "degenerative" type. The rare cases of adult life and old age (not accidental) belong in this category. Here palliation only is to be expected, as in degenerative changes elsewhere. In all forms rational indications for treatment are to lessen the oncoming sensory excitation by diet, occupation and medicine, and so lessen the intensity of motor responses which are not provided with suitable overflow and inhibitory mechanisms.

The following papers were read by title:

"A case of Raynaud's Disease, with Autopsy." By C. E. Riggs, M.D., St. Paul.

"Asthenic Bulbar Paralysis." By Henry J. Berkley, M.D., Baltimore.

"A Case of Chronic Adult Chorea with Pathologi-

cal Changes similar to those of General Paresis." By E. D. Bondurant, M.D., Tuscaloosa, Ala.

"The Stigmata of Degeneration." By Frederick Paterson, M.D., New York.

"Clinical Study of a Case of Dreamy Mental State." By Richard Dewey, M.D., Wauwatosa, Wis.

"The Spinal Cord in Cancer, with Report of a Case." By Chas. W. Burr, M.D., Philadelphia.

"Brown-Séquard Paralysis." By Geo. J. Preston, M.D., Baltimore.

"A Case of Brain Tumor, with Operation." By Philip Zenner, M.D., Cincinnati.

"Study of the Morbid Changes occurring in Traumatic Epilepsy." By Alfred Wiener, M.D., New York.

"The Status of Operative Procedure as a Remedial Agent for Epilepsy." By N. E. Brill, M.D., New York.

"A Case of Recurrent Trance." By Smith Baker, M.D., Utica.

"The Physiological Action of Trional." By Isaac Ott, M.D., Philadelphia.

"Present Standing of Work among the Insane." By R. M. Phelps, M.D., Rochester.

"Study of Aphasia." By B. Onuf, M.D., Brooklyn.

**ELECTION OF MEMBERS.**

The following named gentleman were elected to active membership: Dr. F. K. Hallock, of Cromwell, Conn.; Dr. John Puntun, of Kansas City; Dr. Alfred Wiener, of New York; Dr. Henry J. Berkley, of Baltimore; Dr. F. W. Langdon, of Cincinnati.

**ELECTION OF OFFICERS.**

The officers elected for the ensuing year were: President, Dr. M. A. Starr, of New York; Vice-Presidents, Dr. H. R. Stedman, of Boston, and Dr. H. S. Upson, of Cleveland; Secretary and Treasurer, Dr. G. M. Hammond, of New York; Councillors, Dr. F. X. Dercum, of Philadelphia, and Dr. Joseph Collins, of New York.

**Recent Literature.**

*A Manual of the Practice of Medicine.* By GEORGE ROE LOCKWOOD, M.D., and others. With 75 illustrations in the text and 22 full-page colored plates. Philadelphia: W. B. Saunders. 1896.

It has been the author's aim to present in this manual the essential facts and principles of the practice of medicine in a concise and available form, and thus "to meet the requirements of those who have been obliged to resort to the larger works of reference with which medical literature is so well supplied." The author has accomplished his aim sufficiently well, but we do not quite see the demand for its being accomplished at all at the present time. He himself realizes that medical literature is well supplied with larger works of reference. We should say it was equally well supplied with smaller manuals. However, this is a question which writers and publishers will decide for themselves. It is difficult to welcome a new *Practice of Medicine* with much enthusiasm. The present volume is really a Manual, and has 985 pages.

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THE CELEBRATION OF THE SEMI-CENTENNIAL OF ANESTHESIA.

THE Massachusetts General Hospital is about to celebrate the Semi-Centennial Anniversary of the First Public Demonstration of Surgical Anesthesia. It was a great event; one, the importance and value of which to humanity, it is difficult for mankind to fully realize to-day, so accustomed has it become to this beneficent gift. It is meet and right that the world should pause a moment and calmly reflect on the full meaning of that sixteenth day of October, 1846.

Through the courtesy of the contributors to the programme we are able to give the readers of the JOURNAL in this number, the issue of which has been slightly delayed, the addresses in full as delivered, at the request of the committee on the celebration, to the guests of the hospital in its new operating amphitheatre. These addresses, though necessarily brief and concise, tell the story of that eventful day. They reveal to a later generation what surgery was before that date; they remind us what surgery has since become and is to-day; they hold out reasonable hopes of further progress in the future; they teach what anesthesia has done for obstetrics and its influence upon medical science.<sup>1</sup>

We also offer the readers of the JOURNAL a fac-simile reproduction of the effective card of invitation sent to its guests at this celebration by the Massachusetts Hospital; a reproduction of the engraving in Rice's "Trials of a Public Benefactor," representing the administration of ether at that first public demonstration, with portraits of the surgeons and physicians who were present; a view of the old operating-amphitheatre as it was at that day; and portraits of Dr. W. T. G. Morton and Dr. J. C. Warren.

This is not a time for reviving the bitter controversies and heart-burnings over priority of discovery and proprietary rights which followed that beneficent de-

monstration, and turned into a curse to individual claimants what proved an extraordinary blessing to humanity at large. We celebrate to-day the first public demonstration of a great fact, and we state again the facts associated with it. Dr. Morton administered the ether, and produced that insensibility to pain which he asserted would follow; Dr. Warren gave him the opportunity and performed the operation. Both men had the courage of their convictions; from that day we date a new era in surgery, and physical suffering was robbed of many of its terrors.

That the same end would have been reached, sooner or later through others, is doubtless true, as it is true of all discoveries, but such a statement is here and now irrelevant. How soon or how late it would have been reached we do not know, but we do know that ether had previously long been played with in an inefficient and half-hearted way, that the announcements made from Boston were at first received with derision and contempt by professional men and medical periodicals of standing in other parts of the country, and that even a year after this first public demonstration so leading and important a hospital as the Pennsylvania Hospital, had not yet ventured upon ether inhalations, and continued its surgical service without anesthesia.

To Dr. Henry J. Bigelow it seems undoubtedly belongs in a considerable measure the credit of forcing from the profession and the public an earlier acknowledgment of what those first operations under ether inhalation at the Massachusetts Hospital meant. His statement, read in abstract, November 3, 1846, before the American Academy of Arts and Sciences, read in full November 9th, before the Boston Society of Medical Improvement, attracted wide attention.<sup>2</sup>

In "Ether and Chloroform: A Compendium of their History, Surgical Use, Dangers and Discovery,"<sup>3</sup> these subjects were discussed by Dr. Bigelow, for and at the request of the Surgical Committee of the National Medical Convention, in a masterly manner. Though avoiding controversy, we allow ourselves to quote a few passages from the pages devoted to the question of discovery:

"A hundred other instances might be cited to show that the man to whom the original hint occurs is not the inventor; nor yet he who forms a theory upon this hint; nor even he who publishes this theory, if he does not convince other people of its truth. This last may readily occur. A man may happen upon a fortunate theory and yet not appreciate its value, so he gives himself no trouble to proclaim it; or perhaps his proofs are not conclusive, and the world will not believe. Goethe knew this when he said, 'many things may be discovered and made known for a long time without producing any effect on the world, or the effect may be wrought without its being observed; wrought and yet not take hold of the multitude. This is the reason why the history of inventions is so surrounded with strange riddles.'

<sup>1</sup> The address of Dr. W. H. Welch, it is to be regretted, will have to be published later.

<sup>2</sup> Boston Medical and Surgical Journal, vol. xxxv, No. 16, November 18, 1846.

<sup>3</sup> Ibid, 1848, pp. 229, 254.

"He is the inventor who generalizes the single instance and who makes the world concede that it is thus generalized. Now if there is any one point which has identified the true inventor's mind, it has been an invincible determination to compel the world to recognize the reality and value of his invention. The inventor saw it himself when other men could not, and he determined that other men should see it, and he accomplished his determination. 'He,' Sidney Smith says, in the *Edinburgh Review*, 'is not the inventor who first *says* the thing, but he who says it so long, loud and clearly, that he compels mankind to hear him.'"

Dr. Morton got the hint of ether from Dr. Charles T. Jackson, as Dr. Simpson, of Edinburgh, later got the hint of chloroform from a chemist, Waldie, of Liverpool; but it is Dr. Simpson's name which is associated with the practical application of the anesthetic properties of chloroform.

We will not rake up the ashes of the past. The curious of this generation are referred to the authorities of a previous one, where they will find instructive reading.

The name of Letheon; the coloring matter with which the fluid was disguised; the inhalers, at first considered of prime importance — all soon and long since disappeared. A tender regard for the full vigor of the primal curse, no longer disturbs us. Even the question of the relative merits of ether and chloroform has been pretty well settled. But there stands out to-day clearly and sharply before us the fact that fifty years ago in the old amphitheatre of the Massachusetts Hospital was given the first public demonstration of a subsequent series which proved to the world and made the world recognize, that ether will always produce complete insensibility to pain, and that it is safe.

#### THE CENTENNIAL OF THE ESTABLISHMENT OF THE BOSTON DISPENSARY.

THE month of September, 1896, completed the one hundredth year of the existence of the Boston Dispensary. Established in September, 1796, at a meeting of a few philanthropic citizens of Boston, this beneficent institution has continually increased its helpful work, the distinctive feature of which has always been the medical care of the sick poor at their homes, constantly enlarging its sphere as the growth of the city has increased its needs, from that time to the present. The annual reports and records of its

<sup>4</sup> Boston Medical and Surgical Journal, vol. xxxv, and subsequent volumes.

Anesthetic Agents, Their Mode of Exhibition and Physiological Effects. Henry J. Bigelow, M.D., Transactions American Medical Association, vol. i.

Annual Report Trustees Massachusetts Hospital, April, 1848.

Etherization, with Surgical Remarks. J. C. Warren, M.D., 1848.

Trials of a Public Benefactor, as Illustrated in the Discovery of Etherization. By Nathan P. Rice, M.D. 1859.

Surgical Observations. J. Mason Warren, M.D. 1867.

A Century of Medicine, 1776-1876. History of Discovery of Modern Anesthesia. H. J. Bigelow, M.D. Also American Journal Medical Sciences, January, 1876.

A Narrative of Events Connected with the Introduction of Sulphuric Ether into Surgical Use. Richard Manning Hodges, M.D. 1891.

work give some slight evidence of the good it has accomplished; but to those who have gone about with its physicians on their rounds and personally seen their work among the suffering poor, the figures seem to give but a cold and impersonal account of the many warm-hearted and unselfish acts of individual charity which have been done by the representatives of the Boston Dispensary among the sick and impoverished.

Starting one hundred years ago with a staff consisting of one physician, it has constantly extended its sphere of usefulness until now its staff includes 54 physicians who attend at the central building on Bennett Street those patients who are able to leave their homes for treatment, and 12 district physicians, whose duty it is to daily visit the sick poor in their homes, among the twelve districts into which the city is divided. The importance of this feature of the work is evident when by referring to the annual report for the past year, page 398 of the JOURNAL, we find that the number of visits made by the district physicians last year was 24,191. The visiting of patients at their homes is really the most distinctive feature of the work of this institution. Those who can leave their homes for treatment may be attended at various hospital outpatient departments and dispensaries in the city, but the Boston Dispensary is the only institution which furnishes free medical treatment to those who are too sick to leave their beds, and who cannot for any reason be cared for in the hospitals of the city. In the case of this too often neglected class of the sick poor the Boston Dispensary finds its most distinctive field. A reference to the figures in the annual report will give an idea of the magnitude of the work at present; but on the occasion of the centennial anniversary a glance at the history of the great charity may not be out of place.

To begin with, it ranks as the oldest medical charity in Boston (being eight years older than the Massachusetts General Hospital), and also as the third oldest dispensary in the United States, the one in Philadelphia and the one in New York City having been established a few years earlier. There were 103 original subscribers, each subscription of five dollars entitling the subscriber to have two patients at one time under the care of the dispensary. Each subscriber to that amount was provided with blank tickets recommending the cases he desired to benefit to the care of the dispensary, and this form of admission by ticket was not discontinued till 1856, when the whole system of affording medical relief to the poor was modified to meet the wants of the increasing population.

Some time in November, 1796, the dispensary was opened at No. 61 Cornhill. Messrs. Smith (Dr. Oliver Smith) and Bartlett were at this time apothecaries to the institution, and Dr. John Fleet was consulting physician. Dr. Oliver Smith, the senior member of the firm of Smith & Bartlett, apothecaries, seems to have taken an active interest in the establishment of the dispensary, and the compiler of the



"History of the Boston Dispensary," which was published in 1858, believes that "from such evidence as can be gathered, to him, more than to any other individual, the public are indebted for the establishment of the institution." Dr. Jackson<sup>1</sup> who was the first physician and apothecary to the dispensary, being chosen by the Board of Managers on September 29, 1796, resigned in October on account of ill health. At the annual meeting of the Board of Managers, on January 12, 1797, twenty dollars were awarded to Dr. Fleet as a compensation for his services from October 21st to that date, and he was re-elected for the ensuing year.

Dr. Fleet seems to have been disposed to furnish a liberal supply of wine to his patients; for on September 8th it was voted by the Board of Managers "that Mr. Andrews be a Committee to agree with Mr. Dennie, or any other person, in case he should decline to supply such quantities of wine as Dr. Fleet may recommend for the use of such patients under the care of the dispensary as may stand in need of that aliment." The supply of wine to patients was so important a feature of the institution in its early years that in 1801 Captain Thomas Dennie was elected Vintner to the institution. The wine bills for 1799 amounted to \$85.33, and by 1819 the amount had risen to \$462.19.

In 1801 the dispensary was incorporated.

In 1816 the staff of the institution consisted of two consulting physicians, three visiting physicians (for the Southern, Middle, and Northern Districts respectively), and three apothecaries.

In 1823 the institution seems to have benefited from an exhibition, for we find that on October 9th, a vote of thanks was passed to Bryant P. Tilden, Esquire, "for his successful exertions in obtaining for the institution the sum of \$320 from the exhibition of the Egyptian Mummy," and from other sources.

On October 13, 1825, the treasurer was authorized to pay the tolls of the physician to the Southern District in passing over South Boston Bridge, and the physician of the Western District was requested to attend patients living on the Mill Dam.

In October, 1820, one of the physicians, Dr. Enoch Hale, gave an account of his work for the year ending at that date, by which it appeared that he had made 2,770 visits, or an average of nearly eight visits daily during the year.

In 1827 a new "Centre District," was formed, and South Boston was constituted a dispensary district.

The "History of the Boston Dispensary," from which most of the foregoing facts are derived, is full of interest to those who care to follow the development of a great charitable institution, but lack of space prevents our giving more than the merest outline of its story.

In 1856 the Central Office was established on Bennett Street, and the dispensary physicians were freed from the almost unbearable annoyance of having their

offices crowded by the frequently ignorant and filthy patients of the institution.

In 1883 the present building was completed, affording for the first time adequate facilities for the work of the Society. As will be seen by the annual report, the number of visits made by patients at this office during the past year was 65,397, a sufficient indication of the extent to which the work has grown.

In closing this short and necessarily inadequate review of the work of the Boston Dispensary during the first century of its existence, we can hardly do better than quote a few of the sentences with which the author of the excellent history of the institution published in 1859, concludes his work.

"It is something," he says, "to have ministered to the wants of a hundred and forty thousand suffering persons, and though there may have been many unworthy recipients, the amount of good done to others is incalculable. It is difficult for one who possesses the common comforts of life to realize, until he is prostrated by disease, his own helplessness, and his dependence on the kind offices of others. How much less can one appreciate the desolation which pervades the dwellings of those who by sickness are deprived of the means of earning a subsistence, and are thus driven to seek relief from strangers. Whatever aversion we may individually feel in viewing the ignorance, the filth, and the occasional ingratitude of the sick poor, their very helplessness is, after all, an irresistible appeal to our sympathy, and we contemplate with a feeling akin to affection the doings of a Society which for sixty-three years has done so much for suffering humanity."

#### MEDICAL NOTES.

**DU MAURIER'S BODY CREMATED.**—The body of Du Maurier the artist, whose recent death in London has caused such widespread regret, was cremated, according to his own wish.

**PROFESSOR RUDOLPH VIRCHOW.**—The 13th of this month was the seventy-fifth birthday of Professor Virchow. It is just fifty years since he was appointed physician to the Charité and privat-docent to the University.

**CELLULOID BANDAGES.**—Celluloid has recently been tried in Germany as a substitute for plaster-of-Paris for the purpose of stiffening bandages. The weight is said to be less than one-fourth that of the plaster-of-Paris and the expense not much greater. A solution in acetone is used, and three or four hours are required for the bandage to become dry, so that although considerable advantage in lightness may be gained, the length of time required would seem to be a serious disadvantage.

#### BOSTON AND NEW ENGLAND.

**ANESTHESIA, DR. O. W. HOLMES.**—"The knife is searching for disease—the pulleys are dragging back

<sup>1</sup> Christian name not given.

**Dislocated limbs** — Nature herself is working out the primal curse which doomed the tenderest of her creatures to the sharpest of her trials; but the fierce extremity of suffering has been steeped in the waters of forgetfulness, and the deepest furrow in the knotted brow of agony has been smoothed forever." Dr. Holmes, who suggested the term anesthesia, thus depicted the event which is now being celebrated in Boston.

**MASSACHUSETTS SCHOOL FOR THE FEEBLE-MINDED.** — The annual meeting of the Corporation of the Massachusetts School for the Feeble-Minded was held at the School at Waltham, on Thursday, October 8, at 2.30 P. M.

#### NEW YORK.

**DEATH OF DR. W. REMSEN TAYLOR.** — Dr. W. Remsen Taylor, one of the most prominent physicians of Long Island City, died at the home of his brother in Middletown, N. J., on October 2d, at the age of sixty.

**POST-NATAL TRANSPOSITION OF THE HEART.** — An unusually interesting autopsy was recently made at the New York Hospital, in the case of a young girl, seventeen years of age, who was severely burned at her home in Walpole, N. H., a year and a half ago. From the position of her heart it was supposed before her death that she presented an instance of congenital transposition of the viscera; but at the post-mortem examination it was found that the abnormal location of the heart was the result of pathological changes. During childhood she had evidently suffered from atelectasis of the middle lobe of the right lung, and in consequence of firm adhesions following this condition, by which the pericardial walls were attached to the wasted tissues, the heart was drawn over to the right side. The death of the patient was due to septicemia and exhaustion resulting from the burns referred to.

**A HIGH MORTALITY RATE.** — The tabulation by the State Board of Health of the vital statistics of the State for the month of July shows that the reported mortality — 12,659 deaths — exceeds that of the month preceding by 3,300, and is nearly 1,000 in excess of that of the corresponding month of last year, as well as that of the past ten years. Compared with the month of June, there was 2,200 more deaths from diarrheal diseases, 500 more from diseases reported as of the digestive organs, and 200 more from diseases of the nervous system. There are also about 100 more deaths as the result of accidents and violence. Compared with the reported mortality of July, 1895, the increase is limited to deaths from local diseases and accidents and violence, from which there were also about 100 more deaths, largely from drowning. The figures for the month of August show a considerable deviation from the ordinary mortality of the month, there having been reported in it 12,475 deaths; which is 1,600 more than in the corresponding month of last year. The increase is attributable mainly to death from the direct effects of heat (sunstroke), oc-

curring mostly during the early part of this month, 1,125 from this cause having been reported; of these 1,040 were in New York City and Brooklyn.

### Miscellany.

#### THE RECORD OF THE FIRST PUBLIC ADMINISTRATION OF ETHER.

The following extract from the records of the Massachusetts General Hospital is the record of the case upon which Dr. Warren operated on the occasion of the first public demonstration of surgical anesthesia. It was published in the *Occidental Medical Times* of March, 1896, in a paper read before the San Francisco Medico-Chirurgical Society by Dr. Washington Ayer, of San Francisco.

BOSTON, Friday, September 25, 1846.

Gilbert Abbott, age twenty, painter, single; tumor on face. This man had had, from birth, a tumor under the jaw on the left side. It occupies all space anterior to neck, bounded on the inside by median line, on the outside is even with the edge of jaw; below, on a level with the Pomum Adami, and in front tapers gradually as far as anterior edge of jaw; integuments not adherent to it; skin smooth and of natural color; it is uniformly soft, except in centre, where a small, hard lump can be felt, corresponding in size and situation with submaxillary gland; can be made to disappear by compression, but seems rather to be displaced than emptied. The edge of the lower jaw bone can be felt, through the tumor, to be irregular. On examination of the inside of the mouth, find a soft, smooth tumor, a hemisphere about five lines in diameter, of a livid color, on the left lobe of tongue, about an inch behind tip. That portion of the organ in front and underneath the tumor is of a dark purple color. This tumor is readily emptied by slight pressure, but it fills again in one or two seconds, but not sooner when pressure is made simultaneously upon the external tumor. For distance of five lines from angle of mouth on right side the lower lip is of a livid hue. This seems to be a continuation of a stripe, similar in appearance, which extends from angle of jaw on right side about on level of lower teeth; it is about four lines wide and slightly raised; its color seems to depend on small spots like granulations, of a livid color, set on mucous membrane of ordinary appearance.

This case is remarkable in the annals of surgery. It was the first surgical operation performed under the influence of ether.

Dr. Warren had been applied to by Mr. Morton, a dentist, with the request that he would try the inhalation of a fluid which, he said, he had found to be effectual in preventing pain during operations upon the teeth. Dr. Warren, having satisfied himself that the breathing of the fluid would be harmless, agreed to employ it when an opportunity presented. None occurring within a day or two in private practice, he determined to use it on this patient. Before the operation began, some time was lost waiting for Mr. Morton, and ultimately it was thought he would not appear. At length he arrived and explained his detention, by informing Dr. Warren that he had been occupied in preparing his apparatus, which consisted of a tube connected with a glass globe. This apparatus he then proceeded to apply, and after four or five minutes the patient appeared to be asleep, and the operation was performed as herein described. To the surprise of Dr. Warren and the other gentlemen present, the patient did not shrink nor cry out, but during the insulation of the veins, he began to move his limbs and utter extraordinary expressions, and these movements seemed to indicate the existence of pain, but after he had recovered his faculties he said that he had

experienced none, but only a sensation like that of scraping the part with a blunt instrument, and he ever afterward continued to say that he had not felt any pain.

*Note.* — The results of this operation led to the repetition of the use of ether in other cases, and in a few days its success was established, and its use resorted to in every considerable operation in the city of Boston and its vicinity.

*Operation by Dr. Warren.* — The patient having been placed in the operating chair, in the amphitheatre, an incision, two and one-half inches in length, was made over the centre of external tumor, just beneath the edge of jaw, extending through skin and subcutaneous tissue. A layer of fascia was dissected off and disclosed a congeries of large veins and small arteries. Hemorrhage was slight, no vessel requiring ligature. A curved needle, armed with a ligature, size No. 6, was passed under the mass, and the tumor included, under a knot with considerable compression. The wound was then filled with a small compress and lint and the patient returned to bed.

Patient continued to do well and was discharged well, December 7th. Cicatrix perfect; tumor same size as on entrance, but no vessels to be detected in it. Tumor on tongue not altered, nor is appearance on inside of right cheek. General health much improved.

#### FIRST PUBLIC OPERATION UNDER ETHER. THE ACCOUNT OF AN EYE-WITNESS.

DR. WASHINGTON AYER, of San Francisco, who was present at the first public operation under ether, gave, in an address before the San Francisco Medico-Chirurgical Society, published in the *Occidental Medical Times* for March, 1896, the following graphic description of the event:

The day arrived; the time appointed was noted on the dial, when the patient was led into the operating-room, and Dr. Warren, with a board of the most eminent surgeons in the State, were gathered around the sufferer. "All is ready — the stillness oppressive." It had been announced "that a test of some preparation was to be made for which the astonishing claim had been made, that it would render the person operated upon free from pain." These are the words of Dr. Warren that broke the stillness.

Those present were incredulous, and as Dr. Morton had not arrived at the time appointed, and fifteen minutes had passed, Dr. Warren said, with significant meaning, "I presume he is otherwise engaged." This was followed with a "derisive laugh," and Dr. Warren grasped his knife and was about to proceed with the operation. At that moment Dr. Morton entered a side door, when Dr. Warren turned to him and in a strong voice said, "Well, sir, your patient is ready." In a few minutes he was ready for the surgeon's knife, when Dr. Morton said, "Your patient is ready, sir."

Here the most sublime scene ever witnessed in the operating-room was presented, when the patient placed himself voluntarily upon the table, which was to become the altar of future fame. Not that he did so for the purpose of advancing the science of medicine, nor for the good of his fellow-men, for the act itself was purely a personal and selfish one. He was about to assist in solving a new and important problem of therapeutics, whose benefits were to be given to the whole civilized world, yet wholly unconscious of the sublimity of the occasion or the part he was taking.

That was a supreme moment for a most wonderful discovery, and had the patient died under the operation, science would have waited long to discover the hypnotic effects of some other remedy of equal potency and safety, and it may be properly questioned whether chloroform would have come into use as it has at the present time.

The heroic bravery of the man who voluntarily placed himself upon the table, a subject for the surgeon's knife,

should be recorded and his name enrolled upon parchment, which should be hung upon the walls of the surgical amphitheatre in which the operation was performed. His name was Gilbert Abbott.

The operation was for a congenital tumor on the left side of the neck, extending along the jaw to the maxillary gland and into the mouth, embracing margin of the tongue. The operation was successful; and when the patient recovered he declared he had suffered no pain. Dr. Warren then turned to those present and said, "Gentlemen, this is no humbug." "The conquest of pain had been achieved."

#### THE BLESSINGS OF ANESTHETICS.

THE following extracts from Sir Joseph Lister's Presidential Address to the British Association, at Liverpool, September 16, 1896, are taken from the *London Morning Post* and are of interest in connection with the present celebration:

This was the jubilee of anesthesia in surgery. That priceless blessing to mankind came from America. It had, indeed, been foreshadowed in the first year of this century by Sir Humphry Davy, who, having found a toothache from which he was suffering relieved as he inhaled laughing gas (nitrous oxide), threw out the suggestion that it might perhaps be used for preventing pain in surgical operations. But it was not till, on September 30, 1846, Dr. W. T. G. Morton, of Boston, after a series of experiments upon himself and the lower animals, extracted a tooth painlessly from a patient whom he had caused to inhale the vapor of sulphuric ether that the idea was fully realized. He soon afterwards publicly exhibited his method at the Massachusetts General Hospital, and after that event the great discovery spread rapidly over the civilized world.

Chloroform and ether still held the field as general anesthetics for protracted operations, although the gas originally suggested by Davy, in consequence of its rapid action and other advantages, had taken their place in short operations, such as tooth extraction. In the birthplace of anesthesia ether had always maintained its ground; but in Europe it was to a large extent displaced by chloroform till recently, when many have returned to ether, under the idea that, though less convenient, it was safer. For his own part he believed that chloroform, if carefully administered on right principles, was, on the average, the safer agent of the two.

The discovery of anesthesia inaugurated a new era in surgery. Not only was the pain of operations abolished, but the serious and sometimes mortal shock which they occasioned to the system was averted, while the patient was saved the terrible ordeal of preparing to endure them. At the same time the field of surgery became widely extended, since many procedures in themselves desirable, but before impossible from the protracted agony they would occasion, became matters of routine practice. Nor had he by any means exhausted the list of the benefits conferred by this discovery. Anesthesia in surgery had been from first to last a gift of science. Nitrous oxide, sulphuric ether, and chloroform were all artificial products of chemistry, their employment as anesthetics was the result of scientific investigation, and their administration, far from being, like the giving of a dose of medicine, a matter of rule-of-thumb, imperatively demanded the vigilant exercise of physiological and pathological knowledge.

While rendering such signal service to surgery, anesthetics had thrown light upon biology generally. It had been found that they exerted their soporific influence not only upon vertebrata, but upon animals so remote in structure from man as bees and other insects. Even the functions of vegetables were suspended by their agency. They thus afforded strong confirmation of the great generalization that living matter was of the same essential nature wherever it was met with on this planet whether in the

animal or vegetable kingdom. Anesthetics had also, in ways to which he need not refer, powerfully promoted the progress of physiology and pathology.

### BOSTON DISPENSARY.

THE statistics of this institution for the year ending September 30, 1896, are as follows:

The number of new patients treated at the Central Office is 28,208, classified as follows:

Medical Department. — Men, 3,401; women, 5,387; children, 4,690; total, 13,478.

Surgical Department. — Men, 1,591; women, 930; children, 770; total, 3,292.

Department for Diseases of the Skin. — Men, 568; women, 547; children, 407; total, 1,522.

Department for Diseases of the Nervous System. — Men, 716; women, 848; children, 117; total, 1,681.

Department for Diseases of the Throat and Nose. — Men, 888; women, 850; children, 600; total, 2,338.

Department for Diseases of Women. — Women, 1,099.

Department for Diseases of the Eye. — Men, 283; women, 467; children, 351; total, 1,101.

Department for Diseases of the Ear. — Men, 226; women, 250; children, 185; total, 661.

Department for Diseases of the Genito-Urinary System. — Men, 2,106; women, 44; children, 8; total, 2,158.

Department for Diseases of the Rectum. — Men, 108; women, 52; children, 1; total, 161.

Orthopedic Department. — Men, 68; women, 77; children, 31; total, 176.

Dental Department. — Men, 146; women, 159; children, 237; total, 542.

The number of visits made by patients old and new at the Central Office is 65,397, classified as follows:

Medical, 24,401; surgical, 35,996; total, 65,397.

The number of patients treated in the Districts is 14,437, including 414 cases of midwifery, classified as follows:

Men, 2,489; women, 5,614; children, 6,534; total, 14,637.

The results of treatment in the Districts are as follows:

Discharged, cured or relieved.	13,178
Removed to hospitals	1,169
Died	276
Remaining under treatment	106
	14,729

Under treatment at last annual report . . . . . 92

14,837

The number of visits made by the district physicians, 24,191

The number of patients treated at the Central Office 42,845

and in the districts

The number of cases of midwifery attended during the year 414

The number of cases of midwifery attended since July, 1886 8,049

Whole number of patients since October, 1796 . . . 1,334,162

Whole number of patients since July, 1856 . . . 1,215,359

Average daily attendance at the Central Office . . . 233

Largest number present any one day, February 24 . . . 370

Smallest number present any one day, January 10th . . . 83

Number of recipes put up at the Central Office . . . 71,981

Number of house recipes . . . . . 60,728

Number of district recipes . . . . . 11,253

Largest number put up in one day, August 31st . . . 387

Smallest number put up in one day, January 10th . . . 118

The list of medical officers for the ensuing year is as follows:

Surgeons. — Drs. Edward O. Otis, Frederic M. Briggs, Edward A. Pease, Warren F. Gay.

Physicians. — Drs. Robert Disbrow, Thomas M. Rotch, Harold Williams, Edward M. Buckingham, William F. Temple, Henry Jackson, Robert W. Greenleaf, Samuel Breck, George A. Sargent, Edward L. Twombly, William E. Fay, William H. Prescott, John J. Thomas, Augustus S. Knight, Horace D. Arnold, Benjamin Tenney, Frederic R. Tower, John W. Bartol.

Department for Diseases of the Skin. — Drs. Francis B. Greenough, Abner Post, James S. Howe.

Department for Diseases of the Nervous System. — Drs. Frederic Coggeshall, William R. Woodbury.

Department for Diseases of the Throat and Nose. — Drs. John W. Farlow, Frederic C. Cobb, William S. Boardman, William E. Chenery.

Department for Diseases of Women. — Drs. John B. Swift, Rufus A. Kingman, George Haven, Malcolm Storer.

Department for Diseases of the Eye. — Drs. Frank E. Draper, William E. Baxter.

Department for Diseases of the Ear. — Drs. Wallace Preble, Edgar M. Holmes. Assistant, Dr. Philip Hammond.

Department for Diseases of the Genito-Urinary System. — Drs. Gardner W. Allen, Charles M. Whitney, John B. Blake, Howard A. Lothrop.

Department for Diseases of the Rectum and Anus. — Dr. Walter J. Otis. Assistant, Dr. Joseph C. Stedman.

Obstetric Department. — Dr. Charles M. Green. Assistants, Drs. Edward Reynolds, Charles W. Townsend.

Orthopedic Department. — Drs. Calvin G. Page, Charles F. Painter.

Pathologist. — Dr. Edward M. Greene.

Dentist. — A. H. Fisher, D.M.D.

District Physicians. — Drs. George M. Muttart, Nelson C. Haskell, William L. Edwards, Edmund C. Stowell, C. Morton Smith, John S. Phelps, James S. Stone, Alfred A. Wheeler, Frank A. Higgins, John N. Coolidge, John W. Dewis, Charles H. Hare.

Physician to Roxbury Central Office. — Dr. Henry F. Hewes.

Apothecary. — George Lachambre. Assistant, Everett C. Dodge. W. H. H. HASTINGS, Superintendent.

### THE ACTION OF THE AMERICAN PEDIATRIC SOCIETY UPON ITS FIRST ANTITOXIN REPORT.

(1) *Dosage.* For a child over two years old, the dosage of antitoxin should be in all laryngeal cases with stenosis, and in all other severe cases, 1,500 to 2,000 units for the first injection, to be repeated in from eighteen to twenty-four hours if there is no improvement; a third dose after a similar interval if necessary. For severe cases in children under two years, and for mild cases over that age, the initial dose should be 1,000 units, to be repeated as above if necessary; a second dose is not usually required. The dosage should always be estimated in antitoxin units and not of the amount of serum.

(2) *Quality of Antitoxin.* The most concentrated strength of an absolutely reliable preparation.

(3) *Time of Administration.* Antitoxin should be administered as early as possible on a clinical diagnosis, not waiting for a bacteriological culture. However late the first observation is made, an injection should be given unless the progress of the case is favorable and satisfactory.

### SECOND ANTITOXIN COLLECTIVE INVESTIGATION BY THE AMERICAN PEDIATRIC SOCIETY.

#### TO THE PROFESSION:

The American Pediatric Society is encouraged to ask the co-operation of the profession in a further collective investigation. Laryngeal diphtheria is believed to furnish a crucial test for antitoxin; the present aim is to ascertain (1) what percentage of cases of laryngeal diphtheria recover without operation, under antitoxin treatment; (2) what percentage of operated cases recover.

The Society asks for records of cases of *Diphtheria involving the larynx, whether operated or not, occurring in private practice in the United States and Canada, treated with antiozin*. It is expected that cases occurring this year will probably be treated with reliable preparations of the serum, will be treated early, and will be given efficient doses.

In order to secure data which shall make the tables complete, circulars containing blanks for ten cases have been printed and are now ready for distribution. It is desired that physicians shall fill out the circulars as cases occur, not trusting to memory, and shall urge their friends having similar cases to record them. Circulars can be had by applying to the Committee (address below). Several groups of cases in the first investigation arrived too late, and were lost to the report. It is desired that circulars as soon as filled (ten cases) be returned to the Committee. The collection of cases must close at the end of March, 1897.

The second report is designed to be a study of cases occurring between the closing of the first report, May 1, 1896, and the closing of the present collective investigation, April 1, 1897.

For extra circulars (blanks), for returning circulars (filled), and for further information please address the Chairman of the Committee, W. P. Northrup, M.D., 57 East 79th Street, New York City.

## THE JUBILEE OF ANESTHESIA.

### OPINIONS OF THE PROFESSION.

EDINBURGH, September 16, 1896.

DEAR DR. WARREN:—Boston does well to commemorate the fiftieth anniversary of the day on which Dr. Morton first gave a public demonstration of the practicability of surgical anesthesia and so put into the hands of his professional brethren the means of saving the patient from untold suffering.

I thank you for your courteous invitation to the Massachusetts General Hospital on such a great occasion, and regret that my University duties make it impossible for me to avail myself of your kindness. Believe me,

Yours very faithfully, A. R. SIMPSON.

DETROIT, September 18, 1896.

DEAR DR. WARREN:—I regret very much that I shall not be able to avail myself of the privilege of attending the exercises in commemoration of the first public demonstration of surgical anesthesia. The occasion is one which cannot fail to excite an universal interest. It commemorates not only the birth of a procedure which has been an unspeakable blessing to the human race, but also the first great contribution made by American surgeons to the surgical science.

It would seem highly proper, therefore, that every American surgeon who cannot be present in person should express his warm congratulations to the trustees and staff of the great hospital, which was the scene of this great surgical exploit, in writing.

Please accept, my dear doctor, my sincere sympathy with you in your coming celebration.

Yours cordially, THEODORE A. MCGRAW.

LONDON, September 14, 1896.

MY DEAR DR. WARREN:—I beg you to allow me thus to thank you and the other members of the staff and the trustees of the Massachusetts General Hospital for the invitation with which they have honored me. I am deeply sorry that I cannot be present at the proposed commemoration of that which was certainly one of the most notable events in the history of surgery. I am sincerely yours,

JAMES PAGET.

TORONTO, September, 30, 1896.

DEAR DR. WARREN:—The idea of celebrating in your hospital the fiftieth anniversary of the first public demonstration of surgical anesthesia is a happy conception, and I should be delighted to attend the proposed function if it were possible for me to get away at the time.

To no city in America is surgical science a greater debtor than to your own, and I would gladly take part in any procedures tending to the acknowledgment of debts that we can never hope to pay. There are no boundary lines limiting the spread of such beneficent discoveries as have been given to the world by the members of our profession in Boston. When I think of what the discoverers of anesthesia, of what Holmes, and Bigelow, and Bowditch, and those who have borne and now bear the honored name of Warren have done for us, our obligation weighs heavily, and we can but rejoice that through Lister and through the grand traditions of British surgery we are able in part to make a return.

I wish you heartily a celebration worthy of the occasion and of the men who will take part in it, and am

Yours sincerely, N. A. POWELL.

FRANKFURT A. M., 27 Sept., 1896.

HOCHGEHRTE HERREN:—Ihre sehr ehrenvolle Einladung zu der Commemoration of the Fiftieth Anniversary of Surgical Anesthesia ist mir zugegangen. Sie war mir um so erfreulicher als ich selbst eine der ersten war, der im Jahre 1846 in Berlin selbständige versuche mit der Äther-Narkose gemacht hat. Niemand kann mehr als ich selbst von der Wichtigkeit dieser entdeckung überzeugt sein, und ich würde mich glücklich schätzen, wenn ich Ihnen persönlich meine Glückwünsche aussprechen könnte. Aber die zeit gestattet mir nicht so kurz vor der Wieder beginnen meiner Vorlesungen Europa zu verlassen.

Nehmen sie daher meine herzliche grüsse und die Versicherung meiner aufrichtiger Hochschätzung der Amerikanische Heilkunst entgegen.

RUDOLF VIRCHOW.

SAN FRANCISCO, CAL., October 7, 1896.

DEAR DR. WARREN:—Great events make memorable history. The eventful discovery of ether owns the most brilliant page in the history of medicine—a page full of the recorded blessings of anesthesia; and yet at the close of the nineteenth century, who can tell what other great discoveries will soon follow to relieve human suffering? While being thankful for the past, let us be hopeful for the future.

California sends greeting to Boston upon the semi-centennial anniversary of the discovery of ether. While steel and iron ties bind the shores of the Pacific and Atlantic together, still stronger ties unite the Occident to the Orient in bonds of unity—the ties of fraternal love and good fellowship for the members of the noble profession of medicine. I well remember the simple preparation made in the amphitheatre of the Massachusetts General Hospital for the most important surgical operation the world ever witnessed, which gave painless surgery to the world. There was no display, no ostentation, but the profound silence told the importance of the occasion. Then Dr. W. T. G. Morton administered the ether and Dr. John C. Warren performed the operation, and the anxious suspense was over when the apparently lifeless body of the patient began to move. A new revelation was then given to the world, and the scene that followed no pen will ever be able faithfully to describe; but, after fifty years, it is fresh before me, like a living picture daguerrotyped on the memory, there to remain forever.

I hoped to revisit the scenes of my youth and be present at this grand jubilee, held in commemoration of the most important event in the history of medicine, but sickness compels me to forego the pleasure, while the world rejoices in the benefactions bequeathed to suffering humanity by the discovery of ether. Yours sincerely,

WASHINGTON AYER.

## METEOROLOGICAL RECORD

For the week ending October 3d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. °		Rainfall in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S...27	30.20	67	77	57	89	77	83	S.W.	S.	10	9	F.	C.	.5 .0
M...28	30.22	61	65	57	84	79	82	N.W.	N.E.	12	4	O.	O.	
T...29	30.24	56	62	51	86	83	84	N.W.	E.	2	9	O.	O.	
W...30	29.74	68	78	58	94	79	86	S.	S.	24	14	F.	C.	
T... 1	29.81	64	70	58	81	66	74	S.W.	N.W.	8	8	O.	C.	
F... 2	29.96	54	58	49	94	90	92	N.W.	N.	11	8	R.	O.	
S... 3	30.16	52	56	48	81	84	82	N.W.	S.	8	6	O.	C.	
P														

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 3, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	698	287	14.84	18.44	8.12	.70	2.80	
Chicago	1,678,967	899	143	23.25	9.00	9.00	5.50	5.50	
Philadelphia	1,164,000	401	133	13.50	16.50	5.50	.75	5.00	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	491,206	220	58	17.55	9.00	7.20	1.80	6.85	
Baltimore	496,315	198	86	8.67	8.67	1.02	3.06	3.57	
Cincinnati	336,000	79	22	10.08	13.88	3.78	1.26	5.04	
Cleveland	314,537	66	22	13.86	1.54	—	3.08	6.16	
Washington	275,500	96	24	20.80	14.56	6.24	8.32	4.16	
Pittsburg	238,617	70	26	26.74	7.15	11.44	4.29	8.58	
Milwaukee	275,000	—	—	—	—	—	—	—	
Nashville	87,754	25	7	12.00	24.00	—	—	—	
Charleston	65,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	98,887	36	13	18.85	8.31	18.85	—	—	
Fall River	88,020	46	22	17.36	29.19	13.02	2.17	2.17	
Lowell	84,359	35	20	22.88	6.72	17.16	2.86	2.86	
Cambridge	81,519	18	8	38.88	5.55	22.22	5.55	11.11	
Lynn	62,335	—	—	—	—	—	—	—	
New Bedford	55,254	22	12	20.75	4.15	16.60	4.15	—	
Springfield	51,534	25	8	24.00	20.00	16.00	—	4.00	
Lawrence	52,153	21	9	38.06	14.28	28.56	—	4.76	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	14	7	57.12	7.14	35.70	7.14	7.14	
Brookton	33,157	—	—	—	—	—	—	—	
Haverhill	30,185	9	4	11.11	—	—	11.11	—	
Malden	29,709	7	1	14.28	28.56	—	14.28	—	
Chelsea	31,295	8	3	12.50	—	—	—	—	
Fitchburg	26,394	7	4	—	14.28	—	—	—	
Newton	27,622	5	4	40.00	—	40.00	—	—	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	11	4	27.27	18.18	27.27	—	—	
Waltham	20,877	4	1	50.00	25.00	25.00	25.00	—	
Quincy	20,712	—	—	—	—	—	—	—	
Pittsfield	20,447	—	—	—	—	—	—	—	
Everett	18,578	—	—	—	—	—	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,554	4	1	25.00	—	—	—	25.00	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 2,600: under five years of age 939; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 453, consumption 309, acute lung diseases 227, diarrheal diseases 209, diphtheria and croup 112, typhoid fever 65, whooping-cough 30, scarlet fever 15, measles, cerebro-spinal meningitis and malarial fever 6 each.

From whooping-cough New York 11, Chicago 6, Philadelphia 5, Nashville 3, Boston and Cleveland 2 each, Washington 1. From scarlet fever New York 4, Chicago and Brooklyn 3 each, Somerville 2, Boston, Pittsburgh and Lawrence 1 each. From measles New York 6. From cerebro-spinal meningitis Baltimore, Boston, Philadelphia, Washington, Springfield and Chelsea 1 each. From malarial fever New York and Chicago 2 each,

Baltimore and Cleveland 1 each. From erysipelas Chicago 3, Salem 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending September 26th, the death-rate was 15.3. Deaths reported, 3,178: diarrhea 118, diphtheria 84, whooping-cough 60, scarlet fever 50, fever 50, measles 43.

The death-rates ranged from 9.7 in Croydon to 23.3 in Gateshead: Birmingham 15.1, Bradford 13.4, Bristol 12.7, Huddersfield 13.5, Hull 21.7, Leeds 13.7, Leicester 13.4, Liverpool 18.2, London 14.9, Manchester 19.3, Newcastle-on-Tyne 17.2, Nottingham 15.0, Portsmouth 9.9, Sheffield 13.5, Swansea 16.9.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 2, 1896, TO OCTOBER 9, 1896.

CAPTAIN WILLIAM B. DAVIS, assistant surgeon, to be surgeon with the rank of Major, August 11, 1896, *vice* WORTHINGTON, deceased.

## SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — The first regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, October 19th, at 8 o'clock.

Dr. E. A. Codman, by invitation, will read a paper on "The Application of the X-rays to Surgery and Medicine."

The following gentlemen will take part in the discussion: Prof. Elihu Thompson, Prof. John Trowbridge, Dr. Francis H. Williams and Dr. Maurice H. Richardson.

JAMES G. MUMFORD, M.D., Secretary, 197 Beacon St.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place on Wednesday evening, October 21st, at 8 o'clock.

Papers will be read as follows: "Arterio-Sclerosis," Dr. W. H. Prescott.

"A Case of Syphilis of the Heart," Dr. F. Coggeshall.

Business of the meeting:

Election of a chairman for the ensuing two years.

JOHN L. AMES, M.D., Secretary.

SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION. — The ninth annual meeting of the Association will be held in Nashville, Tenn., Tuesday, Wednesday and Thursday, November 10, 11 and 12, 1896.

Those who contemplate attending the Pan-American Medical Congress, to be held in the City of Mexico, November 16-19, 1896, will have time to do so after the meeting of the Association.

## BOOKS AND PAMPHLETS RECEIVED.

Report of the Tenth Annual Meeting of the American Association for the Advancement of Physical Education, held at Teachers' College, New York, April 25-27, 1896.

A Critical Study of a few of the Changes found in the Fields of Vision, taken whilst the Eyes are Placed at Right Angles to their Ordinary Position. By Chas. A. Oliver, A.M., M.D. Reprint. 1895.

Long Life: The Occasional Review of an Investigation of the Intimate Causes of Old Age and Organic Death, with a Design to their Alleviation and Removal. Conducted by C. A. Stephens, M.A., M.D. Volume II. The Laboratory. Norway Lake, Maine. 1896.

The Tonic Treatment of Syphilis. By E. L. Keyes, A.M., M.D., late Professor of Dermatology, Syphilology and Genito-Urinary Surgery in the Bellevue Hospital Medical College; Consulting Surgeon to the Bellevue Hospital. Revised edition. New York: D. Appleton & Co. 1896.

A System of Surgery. By twenty-six English authors. Edited by Frederick Treves, F.R.C.S., Surgeon to, and Lecturer on Surgery at the London Hospital; Examiner in Surgery at the University of Cambridge. Vol. II. With two colored plates and 487 illustrations. Philadelphia: Lea Brothers & Co. 1896.

A Text-Book of Histology, Descriptive and Practical, for the Use of Students. By Arthur Clarkson, M.B., C.M., Edin., formerly Demonstrator of Physiology in Owen's College, Manchester; late Demonstrator of Physiology in the Yorkshire College, Leeds. With 174 colored illustrations. Philadelphia: W. B. Saunders. 1896.

The Medical and Surgical Uses of Electricity. By A. D. Rockwell, A.M., M.D., formerly Professor of Electro-Therapeutics in the New York Post-Graduate Medical School and Hospital; Fellow of the New York Academy of Medicine; Member of the American Academy of Medicine; of the New York Neurological Society, etc. Illustrated with 200 engravings. New edition. New York: William Wood & Co. 1896.



## Address.

THE INFLUENCE OF ANESTHESIA UPON MEDICAL SCIENCE.<sup>1</sup>

BY WILLIAM H. WELCH, M.D., BALTIMORE.

*Mr. President, Gentlemen of the Board of Trustees and of the Medical Staff of the Massachusetts General Hospital, Ladies and Gentlemen:*—Five months ago was celebrated the centennial anniversary of that grand discovery by Jenner which brought under subjection the most prevalent and horrible scourge of former centuries. To-day we have assembled in this famous hospital on the very spot, made memorable for all time, where fifty years ago William Morton first demonstrated to the world the art of surgical anesthesia, the happiest gift ever conferred upon mankind by medical science or art. We may add to vaccination and anesthesia the more recent introduction of antiseptis by Lister; and we can truthfully say that all the previous centuries can show no achievement of the art of the physician or surgeon comparable in beneficence to any one of these triumphs of the last hundred years.

It is in consequence of their enduring utility and benefit to humanity that these discoveries, which have led to the mastery over a pestilence, the annulment of pain and the safe healing of wounds, merit the everlasting gratitude of the world. But it is fitting on such a commemorative occasion as this, that, while these practical aspects receive their due consideration, we forget not the debt which these great discoveries owe to science nor the debt which science owes to them. It is, therefore, most appropriate that those who arranged the programme to commemorate this fiftieth anniversary of the first public demonstration of surgical anesthesia should have chosen as one of the themes to be here presented, "The Influence of Anesthesia upon Medical Science." Their wisdom I am sure was less conspicuously manifested in their selection of the medium for the presentation of this subject, highly as I esteem the honor of being invited to speak upon this occasion.

In the limited time allotted to an individual speaker I cannot hope to do more than to present in outline some of the salient aspects of my theme.

I shall not attempt to trace the history of the discovery of surgical anesthesia, a history which affords a lamentable illustration of how the awards of generous gratitude may be sacrificed to fruitless efforts to mete out equal and exact justice. I wish in this connection to call attention only to the fact that this discovery was made in the only way in which it possibly could have been made, and that is by the method of experimentation. The opponents of animal experimentation have endeavored to utilize for their purposes the alleged absence of experiments upon animals as the basis of this discovery. As a matter of fact, even leaving out of account the pioneer experiments upon animals by Humphry Davy with nitrous oxide, the first successful trial of ether as a general anesthetic for human beings by Morton was preceded by his demonstration of the power of this agent to produce in dogs unconsciousness and insensibility to pain. It

would be strange, indeed, if these striking results of experiments upon animals had no influence in inducing him to test their applicability to human beings.

It must, however, be admitted that the production of anesthesia in man by inhalation of ether was not preceded by such numerous and properly conducted experiments on animals as were required to afford any adequate conception of its effects or its possibilities of danger. We now know that such experiments would have yielded knowledge of this character. We know also that the anesthetic sleep induced by ether in man as well as in animals is not attended with more than a minimal amount of danger; but suitable experiments upon animals would have afforded more knowledge than Morton could have possessed as to whether there was to be sure awakening from that sleep so like unto death. Hence it is that when that patient fifty years ago to-day in this hospital was placed under the profound influence of ether he was made the subject of a scientific experiment of immense practical import and of unsurpassed boldness. This was the decisive experiment from which dates "the continuous and consequent history" of anesthesia.

The discovery of surgical anesthesia is, I repeat, a triumph of the experimental method, albeit man himself was made the subject of experiment and thereby exposed to unknown possibilities of danger.

If my theme embraced the consideration of all of the relations of artificial anesthesia to medical science, and did time permit, it would be proper for me to direct attention to the part played by animal experimentation in the discovery and introduction of new anesthetics and to the numerous physiological and pharmacological experiments, mainly upon animals, which have shed so much light upon the mode of action of anesthetics, particularly of ether and chloroform, and the sources of danger in their employment. Although not all of the questions involved have yet been solved, these experiments have furnished a large amount of knowledge of great scientific value and of much practical interest concerning the properties of anesthetics, knowledge which it is certainly desirable to possess and much of which could not have been gained otherwise than by experiments upon animals.

I might speak also of the broad biological interest which attaches to the universal susceptibility of living matter to the sleep-producing influence of ether and chloroform, a susceptibility extending even to vegetable cells and the simplest unicellular organisms, also of how the gentle killing of certain bacteria by chloroform enables us to detect in their bodies toxic substances which are destroyed by more violent modes of death, and further of interesting properties of nerve and of muscle which have been revealed by studying under various conditions the action upon them of anesthetic agents. But I do not interpret the subject assigned to me as including the consideration of such matters as these, interesting as they are, and it is certain that time would not permit even their sketchy presentation upon this occasion.

What I especially desire to emphasize in these brief remarks is that the utility of the discovery of anesthetics is not limited to their practical application to the surgical and medical and obstetrical arts, but that this discovery has been of great service also to medical science upon which these arts in large part rest.

Anesthetics appeared upon the scene at a time

<sup>1</sup> Remarks made October 16, 1896, at the Commemoration of the Fiftieth Anniversary of the First Public Demonstration of Surgical Anesthesia at the Massachusetts General Hospital, Boston.



when the experimental medical sciences were entering upon an epoch of activity and success far surpassing anything previously known in the history of medicine. The shackles of philosophical speculation and dogma which bound medicine at the opening of this century had been broken by the work of such men as Bichat, Magendie, Johannes Müller, Rokitsansky, Laennec and Louis. Their work was based upon exact observation and experiment, and there had come to be a general realization of the fact that these are the only trustworthy sources of knowledge. Animal experimentation, which, as a fruitful method of investigation, began with Harvey's discovery of the circulation of the blood, had in the hands of Charles Bell, Magendie, Müller and others yielded abundant proofs of its value. It was during the fourth decade of this century that those great experimenters, Claude Bernard, from the school of Magendie, and Du Bois-Reymond, Helmholtz, Brücke and Ludwig, from the school of Müller, started their epochal investigations in physiology. It was at the same period that Virchow and Traube began those researches which established animal experimentation, already successfully employed by John Hunter, as a most important aid in the development of pathological physiology. It was then also that experimental pharmacology, which had been inaugurated by Magendie, was first cultivated as a distinct branch of medical science by Buchheim. The need of suitably equipped laboratories where experimental investigations could be conducted was now felt more keenly than ever before. By being the first to supply these essential instruments of fruitful scientific activity, Germany took the lead in scientific discovery, a position which her enlightened policy in the establishment and support of laboratories has enabled her ever since to retain.

The introduction of artificial anesthesia came at this auspicious period of awakened activity, which gave such promise of the rapid development of scientific medicine through the aid of exact observation and experiment. And how brilliantly has this early promise been fulfilled by the discoveries of the last fifty years which have witnessed the creation of cellular pathology, the rapid development of physiology to a biological science of the first rank, conferring great benefits upon medicine but extending far beyond the boundaries of medicine, the establishment of pharmacology upon a broad scientific basis, and the birth of the science of bacteriology which has unlocked the gates to new fields whose brief exploration has already proven of such immense importance to preventive and curative medicine and practical surgery! It is true that, when we consider all that we may reasonably hope to learn concerning the structure and functions of living beings in health and in disease and how they may be influenced for good or for ill, only a corner of the curtain has been lifted, but when we compare the advance of medicine during the last fifty years with what was previously known, we can truthfully say that this advance has been greater during these years than during all the previous centuries.

A large and important part of this progress is attributable to the results obtained by means of experiments upon animals. One has only to imagine blotted out from the records of physiology, pathology, pharmacology, hygiene, bacteriology and other medical writings all of the facts which have been derived from animal experimentation to realize how immense would

be the loss to both scientific and practical medicine, had investigators been deprived of this indispensable method of research. To point out in detail how broad and deep would be this gap cannot be even attempted in the short time here allotted, and would be surely unnecessary before this audience.

The use of anesthetics has been such an important aid in the performance of these experiments upon animals during the past fifty years that it is eminently fitting on this jubilee that medical science should also pay its tribute to the beneficence of the great discovery here celebrated.

The ways in which anesthetics have been serviceable to animal experimentation are essentially similar to those in which they have benefited surgery.

The great majority of painful vivisectional experiments upon the higher animals are of such a nature that the object of the experiment is not defeated by the employment of anesthetics. In experiments of this class all trained experimenters should and do use anesthetics, and there is no evidence that there exists to-day any abuse of vivisection on this score in any properly conducted laboratory. The dictates of humanity demand that we shall gain for the benefit of man knowledge which can be acquired only from experiments upon animals, and they demand also that this knowledge shall be gained without the infliction of needless suffering. Humane instincts are not less active among those who devote themselves to acquiring knowledge in this way than among other classes of men, but these instincts in the former are controlled not by false sentiment but by reason and duty. It is a source of immense gratification to experimenters, as it should be to all with humane impulses, that in consequence of the discovery of artificial anesthesia so large a part of the useful knowledge which can be derived only from experiments upon animals can now be acquired without the infliction of pain. To cite the animal experiments of pre-anesthetic days, as for example those of Magendie, as illustrations of present methods of experimentation, is as unwarrantable as would be a similar procedure in describing surgical operations.

The advantages of anesthesia are not limited by the mere abolition of pain. In animal experimentation as well as in surgery the insensibility to pain and the cessation of voluntary movements induced by anesthetics have rendered many operations easy which would otherwise have been difficult, many practicable, which would otherwise have been impossible. The success of the experiment is made much more certain when the operator can work at ease and without undue haste, undisturbed by the thought that he is inflicting pain. There are physiological experiments which, so far as I am able to judge, make greater demands upon the patience and operative skill and delicacy of manipulation of the operator than any in surgery, and these never could be performed upon a sensitive and struggling animal. Sensations of pain are in themselves a disturbing factor which would defeat the purpose of not a few delicate physiological experiments. The experiments to determine the functions of the brain, which have yielded results of great importance to practical medicine and surgery as well as to science, may be mentioned as one out of many illustrations of this fact. The antiseptic management of wounds, which is essential to the success of some experiments and which alleviates subsequent suffering when it is

necessary that the animal should survive the experiment, is greatly facilitated by the use of anesthetics.

I trust that I may be pardoned if I pause here for a moment to correct a misconception which does not exist among well-informed medical men, least of all among practitioners of medicine, but which plays a considerable rôle in antivivisection literature. I refer to the distinction there made between the use of anesthetics and that of narcotics for the purpose of rendering animals insensible to pain. So far as the point in question is involved this distinction is ridiculous, and seems to be based upon a misunderstanding of some old physiological experiments. For prolonged experiments it is often advantageous to place the animal in the sleep induced by morphine or chloral instead of that of ether or chloroform. These drugs are administered in much larger doses, and often in different ways, than is customary in human beings. That under these circumstances the animal is rendered insensible to pain is a fact, the knowledge of which might have been gained from ordinary medical experience.

Curara is a drug which has important uses in a certain class of experiments upon animals. It has never been claimed by any scientific man that it is an anesthetic, although it has been found capable of affording great relief from pain in some spasmodic affections of human beings. Its use has led to important physiological discoveries which could not well have been made without it, and in a limited class of cases its employment, either with or without the coincident administration of anesthetics, is indispensable.

There are, of course, experiments upon animals in which there is no occasion to employ anesthetics. Animal experimentation and vivisection are not co-extensive terms. There is a large group of experiments, mostly of a painless character, in which there is no cutting or other operative interference whatever with the animal. Here belong many of the experiments upon metabolism, upon diet, upon the fate of drugs, etc. There are others in which the operative act is so slight or transitory that the animal would suffer far more discomfort from the administration of an anesthetic than from the operation itself. There are, finally, painful vivisection experiments, relatively few in number however, whose purpose would be defeated by the use of anesthetics. A striking example of such an experiment is that of Charles Bell in determining the motor and sensory functions of the nerve roots of the spinal cord, an experiment which, with those of Galvani, laid the foundations of modern nerve physiology.

Experiments upon animals have been and must continue to be an indispensable aid to the progress of scientific and practical medicine. In the performance of a large number of these experiments the use of anesthetics is of priceless service. I trust that without presumption I may here express in behalf of the great body of scientific workers in medicine throughout the civilized world their feelings of gratitude for the great boon conferred upon medical science by the discovery of artificial anesthesia, which in the form of a safe, useful and effective method, was first promulgated from this hospital fifty years ago to-day.

A CASE of acute dilatation of the heart brought on by over-exertion in bicycling is reported by Dr. William C. Krauss, of Buffalo, N. Y., in the *Journal of the American Medical Association*, of October 10, 1896.

## Original Articles.

### REMARKS ON THE OPPORTUNITIES AND RESPONSIBILITIES OF NEUROLOGICAL EXPERTS WITH REGARD TO MEDICO-LEGAL TESTIMONY.<sup>1</sup>

BY JAMES J. PUTNAM, M.D., BOSTON.

It is almost needless to point out that medical experts who testify in court, in suits for personal injuries, occupy positions of great responsibility, especially in these days, when neuropathic tendencies are so common and when the travelling public is so large. A great deal of criticism is to be heard as to expert testimony in jury trials in cases of this sort; which to some extent is justified, and which to some extent is due to ignorance of the true nature of the cases at stake.

The questions which I wish to bring before you are: (1) Can we do anything to increase the standing and value of medical testimony? (2) In the present state of the law, are persons who are injured and who bring suits for damages more likely to suffer severe and persistent nervous symptoms than those who are injured and do not bring suits? (3) Does the fact that suits for damages are so common materially increase the liability to suffer from nervous symptoms on the part of injured persons whose cases could not be made the subject of such suits? In other words, Is the terror which surrounds accidents in general increased for the whole community by the fact that the results of certain accidents are so often made the subject of litigation, and held up to the general notice as very serious? (4) Can we take advantage of our position as advisors, either to suggest improvements in legal procedure as regards expert testimony, or to suggest means by which some of the consequences of injury could be avoided?

(1) It is certain that expert testimony in the class of cases which I have in mind has greatly improved within the past twenty years; but there is room for more improvement still, and the need will continue until the day comes when it shall be impossible to obtain so many different opinions from men whose views ought to be essentially alike. It is, no doubt, difficult, and even impossible in many cases, to frame an exact diagnosis and prognosis, and still more so to find terms which will really convey our belief to the minds of the jury. But I think every expert would find that both his belief and his mode of expressing it would be susceptible of slight shifting toward the side of his quasi-opponent, provided the circumstances under which the belief had to be expressed were not such as to arouse his controversial feelings. As a matter of fact, we go into court prepared to accentuate our differences, and to minimize our agreements, and this unedifying state of affairs is partly due to the fact that we enlist ourselves too much as lawyers on one and the other side.

I think that much would be gained if both experts should request the privilege of giving much fuller opinions with regard to the case than is now common, instead of merely answering the questions which the lawyers choose to put them. Our legal colleagues expect too much when they ask us to give only that portion of our views which makes their side

<sup>1</sup> Read before the Boston Society for Medical Improvement, April 3, 1896.

of the argument appear stronger. By agreeing among ourselves to request the privilege of discussing the case from both sides and at sufficient length, we could perhaps gradually introduce better customs. It is more common to hear the "truth" told than the "whole truth." Moreover, if fuller statements were customary, differences of opinion between experts, which now so discredit our profession, would largely disappear. It would usually be seen that both sides recognized much the same basis of facts, while a better opportunity would be afforded for judging of the merits of the respective arguments. The expert for the defence, in making his statement, would have the opportunity to point out just how far he agreed with his colleague, and where the differences between them lay. Furthermore, if it would be really an advantage for justice to have medical experts serve as "advisors of the court," instead of being retained by the plaintiff and defendant, the lawyers would certainly be more likely to favor such a plan if they found that the opinions expressed by the best men were substantially the same, no matter for which side they were called.

On the same grounds, experts who trust one another should more frequently seek the privilege of consultation together before appearing in court.

It is probable that these attempts on the part of trained experts to improve their own testimony and increase the respect in which it was held would have the indirect effect of discounting the testimony of those who are less well qualified.

It is as absurd for a surgeon, however considerable his experience, to assume to pass judgment on a difficult question of neurology or psychiatry as it would be for the neurologist to give a critical opinion on the merits of different incisions for laparotomy; and the fact that this absurdity is not generally recognized is but another illustration of the low respect in which medical testimony is held.

Not only this, but the time is come when the neurologist who "qualifies" in court as competent to give an expert opinion in a case involving familiarity with mental diseases and mental peculiarities, or the alienist who qualifies as an expert in neurology, should be expected to have laid a firm and broad basis of knowledge to justify these claims.

(2) The next point is with respect to the effect of trials for damages, first, as regards the patients themselves; and, next, as regards the community, in the way of increasing the terrors of accidents.

It is doubtless true, as Strümpell<sup>2</sup> points out, that there is considerable difference between the effects of an "injury" and the effects of an "accident"; and a similar difference exists between the effects of an uncomplicated accident and that of an accident complicated by a suit. To what are these differences due?

I am far from thinking that either an "injury" or an "accident" is a trifling matter, or that we are able in a given case to decide what degree of complication is introduced by going to law; but the problem deserves such analysis as we can give it, incomplete as that may be.

Most neurologists are now agreed that in most of the accident cases with nervous symptoms, the essential cause at work is a powerful mental impression, an impression which is not less but more effective if,

when it is made, the ordinary consciousness of the patient is largely in abeyance, so that the counteracting efforts of the intelligence and the will cannot make themselves felt. To express it briefly, the patient is, as it were, hypnotized by the sudden shock, though his mind is still sufficiently active to receive the painful impression of the accident. Such a mental impression as this may be complicated in some cases by the action of toxic substances resulting from disordered innervation; in others, by slight but widespread lesions of minute amount; and, perhaps in all, by a disturbance of the vaso-motor system; but, as a rule, whether the case is of neurasthenical, hysterical, hypochondriacal or psychical type, and whether light or severe, the mental impression is the main factor, though the actual accident may be due in one instance to a fall on the end of the back, and in another to a purely moral shock, of which, perhaps, the patient remembers nothing.

It is on this basis that these cases will in the future be studied; and they cannot be studied intelligently without constant reference to the principles of psychology and psychiatry — departments of knowledge which general practitioners and even neurologists too often permit themselves to ignore. The distinction between conscious and subconscious mental action is especially important in this connection.

Assuming, then, that the mental impression is the main causal factor, why does the same accident produce so much more serious effects with one person than with another? Obviously, for one reason, because one person is more strongly predisposed to nervous symptoms; but there may be other causes as well.

After a day or two, one man may bring a suit while another does not, and it is usually felt that the former is likely to be made more hypochondriacal by the temptation to exaggerate his sufferings, by the solicitude and mistaken sympathy of his friends interested in his success, by the suggestions of his legal advisors, by the depressing effects of the trial itself, and by kindred influences. It is even held, now and then, though so far as I know such cases are so rare that they form no recognizable percentage of the whole, that doctors and lawyers sometimes deliberately coach the patient in the details of the symptom-complex of accident psychoses.

These various influences are not brought to bear, it should be remembered, until well after the onset of the illness — at least in the severer cases; and usually when they are brought to bear the case has already received its clinical stamp, so that these causes can only be regarded as intensifying the severity of the symptoms.

It would be interesting to determine whether the fact that accidents have been of late years so much talked about, has had the effect that even in the first flush of a mishap the possibility of disastrous consequences comes more vividly before the mind than would otherwise have been the case.

It would not be surprising if it turned out that this was the case; but the fact that so many persons escape without serious nervous symptoms, even in case of railroad accidents with regard to which this sort of terror would be likely to exist the most strongly, is a very important circumstance, both as regards this and other points.

Besides the influence of the general terror of acci-

<sup>2</sup> Münchener Med. Wochenschrift, 1895, p. 1137.

dents, there is another, of kindred kind, which must be present in very different degrees for different persons, namely, the chance occurrence of some special thought or memory at the moment of the accident, a moment which, contrary to the usual belief, is not only favorable to the entrance of suggestions of this sort, but actually opens the door to them. Sometimes, also, the difference in the rapidity with which the hypnotizing effects of the accident occur, for so they may be called, may have to do with the result. In either event, the effect must take place, in many cases without any contributive thought of litigation being consciously present to the patient's mind.

One often hears it said that when such serious results follow accidents apparently trifling in themselves, there must have been a strong predisposition. Where no evidence of this exists, however, the assumption is gratuitous; and, on the other hand, the evidence increases that we are often without the touchstone which would enable us to rate an accident as "trifling" or "severe," provided the intermediary agent is a mental impression. A terrifying sight or thought, a vague memory, an overwhelming apprehension, especially if accompanied by a jar of the body, however slight, which hampers for a moment the controlling action of the will, may clothe an apparently slight accident with momentous powers for evil.

Let any one imagine himself exposed suddenly to danger, as, for example, from being run over by a carriage which had approached without being noticed, and let him imagine himself to be shaken by a powerful blow or jar at the moment when his forces needed to be at their best in order that he should extricate himself, and he may have some idea of what occurs in railway accidents. Most persons are unable to bear witness to what passes through their minds at such times; but there is evidence enough that the sequence which I have suggested above represents something approaching to the truth for most cases.

It is sometimes urged that the so-called stigmata of hysteria, such as partial hemianesthesia, or retraction of the visual field, are met with much oftener in accident cases which have a legal sequence than in those without this result; and the suspicion is often felt on this account that the presence of these signs is feigned. This is an important matter, because the expert who holds such an opinion without sufficient reason is likely to do great injustice from time to time.

My own experience has led me to two conclusions with regard to this point. One is, that any one who will take the trouble to seek for them with sufficient care will be amazed at the frequency with which he sees these stigmata of hysteria, in cases wholly uncomplicated by legal questions. I have, for example, found them in three cases of severe and protracted neuralgia, two of them being in men. The second conclusion is, that, in spite of Strümpell's opinion to the contrary, an expert may, in the vast majority of cases at the least, so vary his tests as to be practically certain that he has or has not a case of hysteria before him.

Hardly a week passes but that some new means of studying the phenomena of this disease is reported. Some of them, like Wilbrandt's method of investigating the recovery of the fatigued retina, involve time, patience and skill, and I do not believe that it is often necessary to employ them; but, if one is really in doubt, and is going to give an opinion which shall be

practically positive on one side or the other of a legal case, he is bound not to spare himself this trouble.

I have already said above, that a variety of accessory causes usually exist, which influence the subsequent progress of the case, though they rarely account for the main symptoms. From the practical standpoint, these influences are perhaps of special importance, because some of their effects may occasionally be avoided by judicious treatment. Let me say, first, a few words on the tendency to exaggeration.

I believe that a strong tendency of this sort exists, but I see no evidence that most patients fully recognize it or can wholly escape it by exercise of the will.

Who is so wise that he can give the exact verbal equivalent of an ache, slight perhaps, but gnawing enough to break his rest?

The exaggeration may be, and certainly is, occasionally assumed for purposes of gain; but, as a rule, it is partly a sign of the disease (in which hypochondriasis plays a large part), partly dictated by a desire—a foolish one no doubt—that those who have caused the mischief should realize the extent of their misdemeanors and obligations, and partly due to a half-conscious feeling in the patient's mind that, as he would be expected to exaggerate, he must make himself square by doing so. In doing this he is not acting very differently from the expert who dwells with too great insistence upon one side of the case on the principle that his colleague will dwell too much upon the other side. It seems to me a serious injustice for an expert to adopt an unfavorable view of a patient's case because he thinks him in this latter sense an exaggerator, or to conclude, without the most positive grounds, that he is an exaggerator in a more malicious sense. In either case, have not foolish persons, or stupid persons, or exaggerators, or even wilful deceivers, a right to have their injuries recognized; and are not medical experts the very persons who ought to recognize them, unswayed by personal prejudice?

But there is room here for real and reasonable disagreement between experts, and the object of my paper is rather to suggest new opportunities for agreement. I think we might at least agree in seeking to bring about early settlements, on the ground that, so far as one can judge, the plaintiff, the defendant and the community would generally be the gainers. It is needless to point out that for the present this effort will usually be unsuccessful, for reasons with which medical considerations have little to do. But it is just in this direction that physicians can do much to educate the public mind, provided only they act in concert.

There are some interesting facts which throw a side light upon this part of the subject, indicating that, however true it may be that these patients are usually not greatly to blame if the prospect of their suit works unfavorably upon their health, or leads them to exaggerate, it is also true that a rigid determination not to take advantage of the tempting rewards offered by the law, if the securing of these involves anything beyond a speedy settlement, may be worth more to the patient than a large sum in damages.

A gentleman—not a physician, but a student of sociology—who has studied with care and on the spot the working of the German liability law, told me, on his return from Europe, that claimants for damages in the army there are expected to make out a clear case for the justice of their claim, and that anything even suggestive of exaggeration exposes them to harsh and

summary treatment. It was claimed that, as a consequence of this stern sort of mind-cure, it is much less common to see injuries result in nervous symptoms. The truth of this statement I cannot vouch for, but it harmonizes with what we know of human nature.<sup>3</sup>

It is, namely, so difficult for men to exercise the higher qualities of the will — in spite of the fact that without this no noticeable success is attainable — that it is only the trained and intelligent few that can work as hard when work is not needed to support life and to secure comfort as they can under the pressure of necessity. There are abundant facts to show that the instinct to accept a pension, even an inadequate pension, instead of a much larger income obtained by labor, is one scarcely to be resisted. It may not be the majority of injured persons who are swept along by this instinct, but every man is at one time or another subjected to this temptation, and it is the harder to meet because it is so subtle. Many a person will half starve on a weekly pittance rather than work hard for comfortable wages; a Texan steer accustomed to get a scanty but sufficient living off the ground by hard labor, loses this power of self-support if he is fed gratis for a time; and Sir John Lubbock tells of a species of red ants, that they are fierce fighters but so accustomed to be fed by the black slaves they have captured, that they will starve with honey at their side if their slaves are removed.

I do not believe that the present law is, on the whole, a misfortune for the community, though I presume that the greatest benefit that it secures is that it makes engineers more careful; but I do think that the dangers that it brings, in consequence of the existence of half-hidden instincts of this sort, should lead the advisors of an injured man, in most cases, to induce him to get what damages he can through settlement, instead of letting him engage in a long struggle for a larger amount at the risk of thus enervating his power of will and energy.

Strümpell deals with this same tendency, and I agree with what he says, that the term "laziness" is inadequate for explaining a patient's willingness to accept even the smallest pension rather than work. Such a man is frequently under the spell of a sort of fascination (*Zwang der Vorstellungen*) which he does not clearly understand, and cannot, without the pressure of necessity, overcome.

In this connection I cannot but say that it has not been my experience to see patients with well-marked nervous symptoms get well rapidly after the settlement of their suits; and although the grosser symptoms, such as paralysis, especially, frequently pass away very soon, it is certainly rare to find a patient able in a short time to carry on his business as before. No doubt the length of time differs, and no doubt the unfortunate fact of having gone to law helps to keep him sick, but there are too many patients who have not recovered to make it safe for an expert to say that any patient in a given case will recover, or will not recover within a brief period. Such statements are among the pernicious results of giving too brief opinions. If the expert discussed the case as he should in its various bearings, he would be forced to say that there was much to be said on both sides, and that the grounds for decision were by no means conclusive.

There comes to the hospital several times a week, a wretched woman with strongly pronounced hysteric and cataleptic attacks, whose case was settled in September, 1895. In spite of the best treatment that we can devise for her, she has scarcely improved at all. Another such patient (not a medico-legal case) visited us off and on for nearly two years. I am treating another at my office where the symptoms are of rather a neurasthenic character, the patient being an intelligent Scottish woman, whose case was decided one or two years ago. Dr. Edes, in his address on neurasthenia,<sup>4</sup> tells of patients who have been treated at the Nervine Asylum of late years whose illness began at the time of the Roslindale accident. Within a year a young girl has died with acute Graves' disease, brought on by the fright from a trifling accident in which she was not hurt; and Dr. Jelly has reported a similar instance where a man fell in front of an express train but rolled off so as to be entirely uninjured, who, in the interval of five years which has elapsed, has been wholly incapacitated for any kind of prolonged exertion.

It is possible that at some future day, guided by the combined investigations of experts such as those whom this Society, at the instance of Dr. Morton Prince, has formed into a committee, we shall know more than we now know about the prognosis of these cases and shall be able to formulate, to the reasonable satisfaction of a jury, the indications furnished by age, sex, social status, race, occupation, previous history, temperament and the like. This end is important enough to engage the interest of every expert, acting in close conjunction with all his colleagues, and constantly comparing his experience with theirs. One subject which would be pre-eminently important for such a committee would be the degree of susceptibility which patients who have been through an accident psychosis will show as regards future illnesses, accidents and strains. In my opinion it would be quite high.

The fourth question is, What can experts do to check this flood of nervous disease following accidents, or to diminish the ill effects of litigation?

I have already spoken of the importance of our giving fuller opinions and attempting to re-establish professional credit by seeking to accentuate the points of agreement between ourselves rather than the points of difference. Another service would be rendered, as Dr. Prince has pointed out, by suggesting to lawyers that plaintiffs be requested to withdraw from the courtroom during the testimony in which the symptoms and prognosis of their cases are being discussed. If there is anything in the unwholesome effects of suggestions of discouragement, this would seem to be eminently a case where the danger exists and could easily be avoided. Another service which we could render to these unfortunate patients might, perhaps, be in spreading abroad a recognition of the fact that encouragement and suggestions of recovery are probably far more likely to be efficacious in the early days after the injury than at a later period. Janet advances this idea with regard to the well-known "latent period" (sometimes a very long one) after an accident, to which he gives the name of "interval of meditation" (unconscious meditation, of course), when the unfavorable influences of the accident are germinating. Suggestions of a favorable sort, and

<sup>3</sup> See also the report on an interesting series of cases recently published by C. Lauenstein in the *Jahrbücher der Hamburger Staatskr. Anstalten*, 1896.

<sup>4</sup> Boston Medical and Surgical Journal, July, 1895.

even hypnotism in special cases, might be tried to advantage at this time; but this must be done with system and persistence, and with the co-operation of the patient, which, of course, is often lacking.

Finally, I think we might do some good by choosing a better nomenclature, and agreeing on better explanations for these nervous states than those which are now current.

It is important that the lawyers and, if possible, the public, should get to understand, so far as they are able to do so, the real nature of these diseases; and we ought at least to be able to get rid of the bugbear of "organic or functional" disease, for that is a point about which we should probably be in agreement, or, at least, our differences would be as to the definition of the terms.

### THE NATURE OF NEURASTHENIA AND ITS RELATION TO MORBID FEARS AND IMPERATIVE IDEAS.<sup>1</sup>

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In spite of the number of neurasthenic patients seen in hospital clinics and in private practice, and in spite of the treatises on neurasthenia and the studies of the morbid conditions presented by neurasthenic patients, it must be admitted that the term neurasthenia is only too often applied to wholly different affections and that there is still much confusion as to the true nature of the trouble. Few, of course, hold with Arndt that it is practically identical with the neuropathic constitution, and that it may develop into hysteria, melancholia, epilepsy, and even tabes or general paralysis; but many still include under neurasthenia hypochondriacal conditions and morbid mental states.

Besides including many diverse affections under the one heading of neurasthenia, considerable confusion has prevailed as to the nature of the affection. We still hear of spinal irritation and nervous dyspepsia, and many still seek for the source of neurasthenic symptoms in the pelvis, the eye or the nose. Gastric atony and various forms of auto-intoxication have been given undue prominence. With the renewed interest in psychical phenomena there has of late been a tendency to lay much stress upon the part which imperative conceptions play in the genesis and development of the neurasthenic trouble, and to regard neurasthenia as a disease dependent upon morbid ideation.

In order to determine the true nature of neurasthenia it is necessary to study the simpler cases, especially in patients of the hospital class, whose mental processes are less complex, and whose tendencies to morbid imaginings are reduced to the minimum. Such patients have to work as long as their strength will permit, they have to disregard the minor symptoms of their ailments and the morbid ideas which may arise in their minds. They lack the mental development which leads to introspection, speculation and doubt, and thus they afford better opportunities for studying the simpler primary manifestations of neurasthenia.

A study of the symptoms in one hundred consecutive cases of neurasthenia seen in hospital practice and fifty cases seen in private practice may enable

us to determine the chief symptoms of the trouble. The most constant complaint was of nervousness and weakness,—the two conditions generally recognized as the essential symptoms of neurasthenia, and as manifesting the familiar condition of "irritable weakness." The patient is soon exhausted after slight effort, and he has lost the capacity for persistent mental or physical effort on the one hand, and, on the other hand, he is much sooner disturbed and irritated by the petty annoyances of life. This condition is so familiar, and it has so often been described that it is needless to dwell on it. It must, however, be borne in mind as the essential feature in neurasthenia. Next in frequency to these two symptoms came headache, or, much less frequently, unpleasant sensations in the head, such as burning, pressure, or, very rarely, the band-like pressure of Charcot's neurasthenic helmet (*casque neurasthénique*).

Headache, or unpleasant cephalic sensations, were noted in eighty-one hospital and thirty-six private cases. Next in frequency was indigestion, noted in sixty-seven hospital and thirty private cases; disturbances of sleep were found in fifty-nine hospital and thirty-two private cases, and palpitation and other circulatory disturbances in sixty-six hospital and twenty-one private cases. Depression was noted in rather more than half the private cases, twenty-seven, but in only twenty-seven of the hospital cases. Backache and other symptoms were much less common, and were noted in less than half the cases.

These symptoms have a most striking analogy with those observed in conditions of extreme fatigue. In ordinary fatigue there is the desire for rest, food and drink and disinclination for further effort, although effort may be made under extraordinary stimuli. If the effort be pushed, as a result of extraordinary stimuli, beyond the limits of the person's strength, there follows a condition of restlessness, still greater inability for further effort, which can be overcome only by very much greater stimuli, nervousness, irritability, inability to sleep or eat, headache, indigestion and mental depression. The conclusion seems almost inevitable that neurasthenia is closely akin to chronic and extreme fatigue.

The precise pathology of fatigue is still uncertain, but it seems probable that the cells in the cortex, representing the higher volitional centres, are the first to be affected. Whether the fatigue be due primarily to changes in the cell from excessive functional activity, or whether the changes in the cell are secondary to poisoning by the toxins produced as a product of functional activity, is still uncertain.<sup>2</sup> Daily experience, however, shows that actions demanding the constant performance of voluntary and unfamiliar movements, demanding persistent attention, lead to fatigue much sooner than actions which are familiar and which can be regulated by the lower centres; copying English, for example, is easier than copying Italian, and the latter is vastly easier than copying Arabic; walking at will is much easier than walking along a definite mark.

It is not, however, my purpose to dwell on the pathology of neurasthenia—still a field for speculation—or to discuss the various theories of intoxication which are often advanced. I have elsewhere<sup>3</sup> expressed doubts as to the reflex origin of the trouble,

<sup>2</sup> De Fleury: *Revue de Médecine*, February, 1896.

<sup>3</sup> *American Journal of the Medical Sciences*, October, 1895.

<sup>1</sup> Read before the American Neurological Association, June 5, 1896.



and the absence of any digestive symptoms in a respectable minority of the cases would raise a question as to whether gastric atony or other digestive disturbances were very important factors. My present purpose is to inquire how far morbid ideation is a factor in the symptomatology of neurasthenia, and whether we should include such morbid mental symptoms among the symptoms of the disease.

The commonest mental symptom in neurasthenic patients is simple depression, which existed in twenty-seven cases to a degree sufficient to warrant complaint. In patients in private practice it seems somewhat commoner, twenty-seven out of fifty patients complaining of it.

This depression is nothing more than natural. In many cases the neurasthenia is due, in part at least, to grief and worry. The suffering consequent upon the disease, the deprivations and losses that may be due to it, and the uncertainty as to the future, are all depressing factors, and the mental state thus produced is merely the physiological result. I have cited only the cases where the depression was a somewhat marked symptom of this disease. If all cases of slight and temporary depression were included the symptom would be much more common, for few neurasthenics are persistently cheerful. In some cases the depression passes beyond the physiological bounds, and the case is to be regarded as true melancholia. The line of division is by no means a sharp one, and it is sometimes difficult to decide just which term to apply to the affection. In ordinary neurasthenic conditions, however, depression is a secondary phenomenon; it is either the physiological condition naturally due to the grief or worry which produces the neurasthenia, or, when neurasthenia is not due to such a cause, it is the natural result of the weakness and suffering.

Occasionally the depression gives rise to ideas of suicide, often in the shape of a suicidal impulse at the sight of poisons, deadly weapons, etc. These impulses are fully described by the patient, who is apt to be greatly alarmed by them. The true melancholy patient, on the contrary, rarely mentions, and never obtrudes his suicidal ideas. Such vague suicidal impulses are, however, very common in ordinary mental health; most persons, probably, have had the impulse, readily resisted, to jump from a height, jump in front of a locomotive, drink from a bottle of poison, or shoot themselves with a pistol which lies at hand.

Setting aside simple depression, which is rather a physiological consequence than a cause of the neurasthenic state, the chief mental manifestations observed in neurasthenia may be classed under the headings of imperative ideas or obsessions and morbid fears. These conditions, however, are rare in hospital patients, being noted only in twelve out of one hundred patients, seven times in the form of morbid fears, and five times in the form of imperative ideas. These include even the slightest forms of morbid ideation and slight fears, so that, in order to discuss the various fears and imperative ideas fully, we must turn to the more complex cases met with in private practice, where, in fifty cases, such ideas were noted in twenty: fifteen times in the form of fears, six times in the form of imperative ideas.

In his treatise on neurasthenia, Beard dwelt at length upon the various morbid fears, or phobias, the list of which is limited only by the limits of the Greek dictionary, and since Beard's day most of the writers on

neurasthenia have regarded the phobias as comparatively important symptoms of the disease. They merit, however, considerable analysis before they can be so regarded.

There is one large class of fears which have direct reference to the personal welfare of the patient. Ignorant of the real significance of his symptoms or the true nature of his trouble, he fears that he has some serious disease; if there be cardiac symptoms he fears valvular disease and impending death; or if there be marked nervousness or depression he fears insanity. Such fears are perfectly natural and sometimes not unreasonable. They are often based upon actual symptoms which may be misunderstood or misinterpreted. It is not at all strange that the average man, conscious of certain ill-feelings, and ignorant of medicine, should be affected by the quack advertisements which constantly meet his eye and teach him that these ill-feelings are the forerunners of some fatal disease. His fears are perfectly rational, only they may rest upon false premises. Such is the explanation of six out of the seven cases of morbid fears in these hundred cases, and nine out of the fifteen cases in private practice. The fear, like the depression, is a secondary phenomenon, based upon a false, or, sometimes, upon a correct interpretation of the symptoms of the disease. It is relieved when competent authority explains to the patient that he has been reasoning upon false premises, that his heart, his kidneys, his lungs, or his brain, is perfectly sound. In the severer forms of neurasthenia, where the chronic character of the trouble and the failure of various forms of treatment have led to dependency and hopelessness, these fears may persist in spite of reassurance, but their genesis is the same; they are the results, and comparatively infrequent results of neurasthenia, instead of being causes.

In some cases the morbid fear is based only in small part upon actual symptoms of disease. There is, in addition, a marked perversion of the ordinary mental processes. The patient imagines all sorts of symptoms, he misinterprets those which actually exist, and he constructs in his own mind a definite systematized series of delusions. In advanced cases the patient persists in his beliefs in regard to his sufferings and his symptoms in spite of actual demonstration to the contrary. The process is more intellectual than affective; such patients, in spite of the most pronounced belief in the intensity of their sufferings, often can be diverted, whereas a melancholy patient, with equally vivid ideas, can regard only himself. These cases, therefore, are of a delusional type, and in the extreme forms they are much more closely akin to paranoia than to melancholia. We must distinguish carefully between such cases, when the whole mental process is perverted, and those of the former class, where there is simply the natural fear as to the future welfare, based upon a misunderstanding of certain symptoms. The former cases alone are to be classed as true hypochondriasis, and bearing the above distinction in mind, they must be regarded as indicating serious mental perversion, and they should be sharply differentiated from neurasthenia.

The second class of morbid fears are the phobias proper, with all their portentous Greek affixes. These fears arise only when the patient is exposed to certain causal conditions, an open space or a closed space, a high place, lightning, and the like. Exposure to these conditions may give rise to fear, and to certain conditions of anxiety and distress, such as palpitation,



cardiac distress, nausea, diarrhea, sweating, pallor, tremor, a rapid respiration, vertigo, or faintness. Such fears, noted to a greater or less degree in six out of fifty private patients, were not observed in any of the hospital cases.

These morbid fears, however, are not uncommon. They are seldom rational, that is, the fear is seldom due to any actual danger. We may instance the familiar feminine fear of a mouse, or the almost universal dread of snakes, no matter of what variety. I have known the near approach of a cockroach or a June beetle to give rise to agitation, quickened pulse and breathing, slight cardiac distress like a feeling of constraint or oppression, and much anxious dread in a perfectly healthy man, who recognized intellectually that the creature was perfectly harmless. This dread of insects was so great that there was almost equal repugnance to the presence of a dead one, repugnance so great as to render touching the dead body of a spider or June beetle an almost impossible task. Another man, a vigorous and noted scientific man, expressed almost equal repugnance to the large green tomato worm. Various cases are on record where even more severe symptoms were excited by the presence of a cat. A woman who has always had a morbid dread of going upon the water, told me that the symptom was first noted by her parents in very early childhood, when a simple row upon a small pond gave rise to very great disturbance. I have noted similar states of anxiety from thunder-storms.

The dread of high places is a very common form of morbid fear, to which many persons in apparently perfect health are subject. It may be present in childhood, but it is more apt to develop as the child grows older and comes to have a realizing sense of the true peril that may exist in a high place. Exposure on a high place may give rise to the conditions of anxiety just described, — a quickened pulse, cardiac distress, a "gone" feeling in the abdomen, rapid respiration, pallor, tremor, vertigo, nausea, or even diarrhea. The dread of high places is apt to grow stronger when a person is fatigued or debilitated. It is, of course, more pronounced when a person is on an unprotected high place. I have known the Torre del Municipio in Verona whose top is wholly unprotected, cause severe symptoms in a person who was quite unaffected on the Eiffel tower, where a closed bulwark comes up breast high, and it is impossible to look directly downwards. The dread, however, is often present in a most unpleasant degree, where the person recognizes intellectually that there is no danger; it may even occur when standing by the closed window of an upper room in some tall building. In one case, in a man subject to this dread, it attacked him when in an upper room in a high New York hotel, but only during the transition period between sleep and waking. Goethe, who was a victim of this dread of high places, succeeded in curing himself by deliberately exposing himself on the tower of Strasburg cathedral.

In analyzing this dread of high places the feeling seems to be complex. It is not the simple fear of a real possible danger, although that element plays an important part. It seems to be due very largely to a distrust of one's own power to preserve equilibrium upon a dangerous place, and of one's own power to resist the impulse to jump. It arises, therefore, in great part from the feeling that strength will not be sufficient. In conditions of fatigue, debility, and the like, this

feeling of weakness naturally becomes greater, and the morbid fear is worse. In neurasthenic states, as might be expected, all such fears become exaggerated.

Some of these morbid fears, the dread of snakes, of thunder, of high places, have their origin in certain primitive conditions, and are of a protective character; others, such as the dread of insects, of mice, of open spaces, of narrow places, seem to have little rational basis. Some of the fears in each category, such as the fear of high places or the fear of mice, seem to be very general, and not to have any connection with neurasthenia or mental degeneracy. They may occur in men or women of more than average mental attainments, doing their full share of the world's work, and enjoying excellent health. Unless we adopt the somewhat fashionable notion that all men are neurasthenic or degenerate, we cannot class those fears among the symptoms or the causes of neurasthenia or degeneracy. Other morbid fears, notably agoraphobia and claustrophobia, seem to occur chiefly in degenerates.

These morbid fears may, perhaps, be classed, as Meyer has done, under the heading of "intention psychoses," developing only when the patient is placed under certain conditions, and not dependent upon any imperative ideas. Another class of morbid fears are present at all times and are directly dependent upon some imperative idea. The ordinary case of mysophobia is a good example of this. The idea of contamination is constantly present in consciousness and gives rise to the fear. The fear of people is often due to some imperative idea in the same way.

Freud<sup>4</sup> has recently sought to establish a "neurosis of anxiety" (Angstneurose), characterized by general irritability, anxious expectancy, attacks of anxiety, vertigo, phobias of various sorts, digestive disturbances, and paresthesiæ. Such conditions may occur, usually in debilitated or neurotic people, but the anxiety is usually due to morbid fears. In some cases the fears are multiple, giving rise to general apprehension and dread of future evil, so that the condition of anxiety is more constant and more dominant than when the fear is induced by a single cause. In most cases, however, the fear is the primary element and the anxious condition is due to it.

Freud has included several different conditions under his "neurosis of anxiety": the true morbid fears, the fears arising from imperative ideas, and the questionings and hesitations of true *folie du doute*. The centre of the trouble is not, as he thinks, the general anxiety prevailing consciousness, but the anxiety is secondary to definite and individual fears.

This second class of morbid fears which I have just described has close kinship with the various obsessions which have been considered prominent symptoms in neurasthenia. These obsessions, in various forms of greater or less severity, were noted in five hospital cases and six private cases, and they varied from simple introspection, through the scruples and questionings of the New England conscience in its exaggerated form, to the domination of a single idea. I have elsewhere<sup>5</sup> analyzed in some detail these obsessions, doubts and morbid speculations, pointed out that they exist in a lesser degree in healthy minds, and shown their kinship, in the pronounced forms of *folie du doute*, with paranoia.

Of the relation of morbid fears and obsessions to

<sup>4</sup> Freud: *Neurologisches Centralblatt*, January 15, 1895.

<sup>5</sup> *American Journal of Psychology*, January, 1890.

neurasthenia it may be said that the closest study of certain neurasthenics through a period of years has failed to reveal any such morbid mental conditions, that a considerable number of cases of neurasthenia, both in hospital and private practice, show such conditions in only a small percentage of the cases, that in these cases the morbid mental phenomena seem to be secondary to, or to have no causal relation to the neurasthenic condition, and that cases may present these morbid mental conditions without a sign of neurasthenia. It is true, however, that neurasthenia may rarely develop as a consequence of the worry and agitation occasioned by these morbid states, and it is equally true that neurasthenia, like fatigue or debility, may exaggerate such conditions.

We can differentiate more closely than Freud has done in his "neurosis of anxiety." We can recognize in the first place the fears as to bodily health, which culminate in true hypochondriasis. Next we have the fears arising from definite conditions, such as the fear of high places and agoraphobia, which, in their extreme forms, we may class under the heading of phobopsychosis (*sic venia verbo!*). Next come the morbid fears dependent upon imperative ideas, such as mysophobia, the phobic form of *folie du doute*, and, finally the Grubelaucht, or speculative form of *folie du doute*. Hypochondriasis and *folie du doute* have, as I have said, a certain kinship with paranoia. The phobopsychosis although sometimes indicative of mental degeneracy, rarely develops into more pronounced mental disease.

All these morbid mental conditions are akin to mental processes which are often met with in perfectly healthy people. We all of us have our fears, our hesitations, doubts and speculations. The line between these normal conditions and conditions indicating actual disease is no more definite than the line between ordinary mental depression and melancholia. Only when the morbid idea has so far taken possession of the individual as to render him incapable of performing his wonted duties can we say distinctly that he is mentally diseased.

We must recognize, furthermore, that these morbid mental conditions are independent states. They may exist in neurasthenic patients, but they form no part of neurasthenia, and, when we meet them we must recognize that we are dealing with an independent affection.

#### TUMOR ATTACHED TO THE CEREBELLAR PEDUNCLES AND OVERLYING THE FOURTH VENTRICLE.

BY ROBERT T. EDEN, M.D.

MRS. —, age thirty-seven, mother of four children, when four years old had a severe blow on the back of the head, and was affected with weakness and severe occipital headaches for many months.

Eight years ago she began to have headaches, from one to three a week.

Six years ago she had a severe blow on the head from a carriage accident.

Three years ago her mother noticed that from being rather a quiet person she became more talkative.

Two years ago, and from time to time until her death, attacks of vomiting occurred, and during six months of this time gastralgia, during which the headaches were better.

Taste and smell defective two years ago, and entirely gone for the last six months.

One and a half years ago occurred her first "unconscious spell," but no convulsion.

About, or a little after this time, a diagnosis of probable neurotic vomiting was made.

Her "eyes had troubled her" for three years and a half, but there was no decided failure of vision until some weeks after 1895; double optic neuritis had been discovered in November, and a diagnosis of intracranial tumor, probably of the cerebellum, had been made. There was never any paralysis of cranial nerves.

The vomiting after this time occurred at irregular intervals, often several days in succession, usually succeeding an early morning lunch, and was followed by a good appetite for the regular breakfast, and no further disturbance during the day. Severe occipital headaches frequent, during which she was more likely to put her hand to the left side of her head. Latterly her appetite became enormous and, for a few months shortly before death, there was a slight gain in weight.

The urine was in no respect peculiar.

The intelligence was unimpaired throughout.

There was gradual failure of vision.

The patient up to a late period was able to stand and to walk, but there was some swaying, especially backward.

There were no paralytic symptoms until a few days before death, when it was noticed that the head could not be raised from the right shoulder.

The headaches became more severe and almost continuous, attended with congestion and cyanosis of the face.

She died in May with apoplectic symptoms, stertorous respiration and rapid pulse. There was no history or symptoms pointing to specific or malignant disease.

#### AUTOPSY.

Thorax and abdomen not examined.

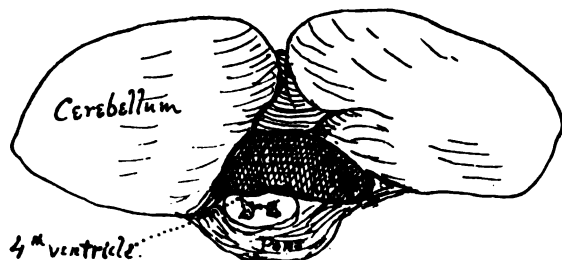
Nothing unusual about calvaria, or membranes, unless, perhaps, marked prominence of the Pacchionian bodies. In the middle fossæ, the brain (that is, apices of temporal lobes) adherent in several small spots, and softened.

The tentorium cerebelli was not specially tense and the cerebellum itself from above presented no appearance or feeling of bulging.

The apex of a tumor was visible between the cerebellum and medulla, slightly to the right of the median line. Upon separating these, it was found to be of a reddish color, not far from the size of the last joint of the thumb (.040 by .017) and attached to the inferior and middle peduncles of the cerebellum upon the right side, and some adhesion to the posterior pyramid upon the left, the lower border being about .017 above the point of the calamus scriptorius. It crossed the median line, although the larger portion was upon the right. It had pushed forward and downward the posterior pyramid of the medulla, so as to press upon the fourth ventricle without itself directly entering that cavity. The medulla below was somewhat thinned, as seen especially in the atrophy of the olivary body upon the right side. The structure of the tumor was very distinctly separated from that of the neighboring cerebellum and medulla, and entirely superficial to them, so that with the exception of a decided compression of the medulla from above downwards, there was no change visible to the naked eye.

The tumor itself had a finely lobulated, almost granular consistence, and was formed of cells of moderate size arranged upon a connective-tissue basis, this again being apparently an appendage of small vessels.

Dr. W. F. Whitney, who kindly examined it, says: "It is made up of a rather convoluted mass of cells in strings, the outer ones being comparatively regularly disposed. Between the strings of cells occur spaces, which gives the spongy texture. Its structure is such as to point to its origin from the pia mater, rather than from the brain itself, and I should class it as an endothelioma."



The lobes of the cerebellum are raised and separated to show the size of the tumor, of which in the natural condition only a very small portion was visible.

In an article upon neurotic vomiting in the number of the *American Journal of the American Sciences* for September, 1895, in speaking of the diagnosis, I made the following remark; "It might be suggested, since no examination of the head was made in the second case, that there was a lesion of the medulla oblongata so circumscribed as to give rise to the symptoms of gastric pain and vomiting and none other. It can only be said of this hypothesis that such a state of things is conceivable in the abstract, but that no such case has been reported, and it is in the highest degree improbable that even one case should go on to a fatal result without a single other manifestation of cerebral (intracranial) disease, and when two such in the observation of one person are called for to sustain this theory, the probability becomes too small to be considered."

The case now described had not occurred at the time that this was written. If it had, it might have been used as an illustration of how nearly the condition there spoken of as highly improbable could be attained. If this patient had died of some intercurrent disease during the summer and no autopsy been held, it would have been very easy to explain her symptoms as among the most common of neurasthenia and nervous dyspepsia.

#### TO HIS DELINQUENT PATIENT.

If I should die to-night —  
And you should come to my cold corpse and say,  
Weeping and heartick, o'er my lifeless clay;  
If I should die to-night —  
And you should come in deepest grief and woe,  
And say, "Here's that \$10 that I owe,"  
I might arise in my great white cravat  
And say, "What's that?"

If I should die to-night —  
And you should come beside my corpse to kneel,  
Clasping my bier to show the grief you feel;  
I say, if I should die to-night —  
And you should come to me, and there and then  
Just even hint 'bout paying me that ten,  
I might arise a while — but I'd drop dead again.  
— *Gross Medical College Bulletin.*

## Clinical Department.

### A CASE OF SARCOMA OF THE SCAPULA.

#### REMOVAL OF THE ARM WITH THE SCAPULA AND GREATER PART OF THE CLAVICLE: RECOVERY.

BY A. T. CABOT, A.M., M.D.

THE following case is reported as a contribution to the statistics of this operation, which has been done, as yet, in so few instances that an accurate estimation of its dangers cannot be made.

Harry K., aged twelve, entered the Massachusetts General Hospital February 3, 1896, and the following history was obtained.

At birth there was some accident to the right shoulder, which was always prominent. He was never able to raise that hand above his face.

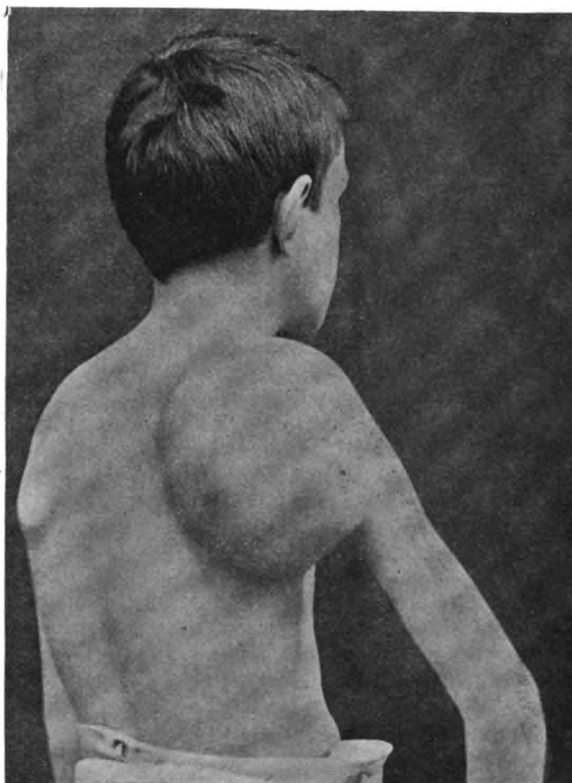


FIG. 1.

Last October he received a blow on the shoulder; and soon after a swelling appeared, which has increased greatly in size and been accompanied by much dull pain. Examination showed the scapula to be occupied and masked by a large tumor which extended forward under the clavicle and down into the axilla. Posteriorly, this tumor reached a point beyond the limits of the bone. The accompanying reproduction of a photograph of the patient shows its relative size.

It was as freely movable over the chest wall as the normal scapula would have been.

The superficial veins were considerably enlarged. The arm was atrophied. At one point in the posterior aspect of the tumor a small opening had been made to reach what seemed to be a collection of fluid; Nothing but blood had, however, been obtained by

this operation, and the wound had healed by a pigmented scar which attached the skin to the surface of the tumor.

It was evident that for the complete removal of the growth the whole upper extremity must be taken with it. The patient's pulse was of a rather unsatisfactory character, being feeble and not having sustained strength. He was put upon strychnia for a few days, and this condition was greatly improved. Operation was done the 12th of February.

An incision was made over the upper border of the clavicle, beginning just outside of the sterno-clavicular articulation and running outward over the top of the shoulder. This incision was carried down through the periosteum of the clavicle, and with the periosteum elevator the bone was quickly stripped and divided at the junction of the middle and inner thirds. The outer part of the bone was now removed, and the subclavius muscle being divided, ready access was ob-



FIG. 2.

tained to the subclavian vessels, which were ligated and divided, the distal ends having been temporarily controlled by pressure forceps.

The incision over the shoulder was now completed by being curved forward and downward so that the skin covering the point and anterior aspect of the shoulder formed a large flap attached anteriorly. The scapula and arm were now rapidly separated from the body by severing their muscular attachments, the skin over the back of the tumor being removed with it. A few bleeding-points were caught issuing from between the ribs and others in the divided muscles of the neck.

The hemorrhage, however, was trifling and was readily controlled. One or two small axillary glands were removed, and the skin flap was then stitched

over the shoulder and made a satisfactory coaptation of the wound, as will be seen by Figure 2.

A microscopical examination of the tumor was made by Dr. W. F. Whitney. The following is his account of its pathology:

"The growth was a more or less rounded one, involving the upper half of scapula, the bone of which could be still found in the midst of the mass. The tissues about the head of the humerus were also infiltrated, although the joint itself was not broken into. Its size in general could be compared to that of a small cocoa-nut. On section it presented a slightly opaque, grayish surface of medullary consistency, and in places almost diffuent and hemorrhagic. Microscopic examination showed it be made up of very large, round cells, between which was a little granular material, with here and there fine fibrous bands running through the growth giving it a lobulated structure. The blood-vessels were mere channels hollowed out in the growth without any distinct walls. The diagnosis is a large, round-celled sarcoma, probably originating in the connective tissue of the scapula and involving the bone secondarily."

The patient was pretty weak for a couple of days, but made a good recovery with primary union of the wound.

Injections of the toxins of the streptococcus of erysipelas and of the bacillus prodigiosus were practised for a fortnight or three weeks.

About three months after operation, the patient returned to show some little hard lumps in the supra-clavicular region. These were removed, and found to be bulbous outgrowths of the ends of the cervical nerves. There was no sign of any local recurrence of the tumor at that time.

In July, five months after operation, the boy presented himself complaining of a general feeling of malaise, with pain in the head and through the back. At this time there was a slight projecting growth over the left temporal bone which was evidently a recurrence of the sarcoma. From this time he rapidly failed, and died in the middle of the summer with symptoms suggesting sarcoma of the brain. No autopsy could be obtained.

## Medical Progress.

### PROGRESS IN PATHOLOGY.

BY JAMES HOMER WRIGHT, M.D.

#### PATHOGENIC BLASTOMYCETES AND MALIGNANT TUMORS.

SINCE Busse, in 1895, cultivated a species of blastomycetes, which was virulent for mice, from a case of chronic pyemia, the attention of bacteriologists has been directed to the pathogenic properties of this group of organisms and to their occurrence in human pathology.

The blastomycetes include a large number of species of unicellular organisms, of which the common yeast is a representative, and are susceptible of essentially the same methods of study as are the bacteria. That certain species of the blastomycetes are capable of producing a general infection in animals by the usual methods of inoculation has been recently conclusively shown by Sanfelice<sup>1</sup> and by Lydia Rabinowitsch, who

<sup>1</sup> Zeitschrift für Hygiene, Bd. xxi, Hf. 1, 3 and Bd. xxii, 1.

have independently tested a large number of the representatives of the group.

Pathogenic forms have also been studied by Malfucci and Sirleo, and by Curtis. The effects produced upon the inoculated animal seem to vary with the species and with the kind of animal, sometimes consisting in a rapid general invasion of the circulation in large numbers, sometimes a slower infection with the formation of metastatic tumor-like nodules in various organs. The contributions of Sanfelice are interesting not only as containing a very full and beautifully illustrated account of the pathogenic effects of two species isolated by him, but also because he believes, with other Italian observers, that members of this group are the causative agents of malignant neoplasms. One of the blastomycetes was cultivated from a case of bovine cancer with calcareous degeneration.

Inoculated into various animals this organism showed a marked tendency to the production of nodules of newly-formed cells and the deposit of calcareous matter about groups of the organism. In general the formation of the nodules of young cells was most marked in animals which resisted the infection the longer, and in these the organisms were fewer in number, while in animals which succumbed comparatively quickly after inoculation, there was little or no cellular reaction on the part of the tissues and the number of organisms distributed throughout the viscera was large. The results of bovine inoculation are not yet reported. It may also be mentioned that the inoculation of the mamma of a bitch is reported to have been followed after several months by the appearance of nodules of a carcinomatous structure in the neighborhood of the gland.

With the other form of blastomycetes essentially the same effects were obtained except that the peculiar deposition of calcareous matter was not observed. In short, Sanfelice thinks he has shown that the amount of cell proliferation with both forms varies directly with the power of resistance to the infection exhibited by the animal, and that the greater the amount of cell proliferation the fewer are the organisms present. This paucity of organisms in the older lesions is apparently accounted for on the ground that many of them are destroyed by the cells.

Reasoning by analogy from these observations, he holds that the malignant neoplasms of man are also due to infection with blastomycetes, his idea being that the human tissues offer sufficient resistance to the infection to cause abundant proliferation of cells and that these new growths are only a special phase of the same phenomena seen in his animals. He thinks that the various microscopical bodies, which have been described in malignant tumors in recent years, and which have been regarded by some as parasites, coccidia or psorosperms, and by others as merely degenerated or atypical tissue cells, are really blastomycetes.

In support of this view, he states that the blastomycetes, as seen in sections of the tissue of inoculated animals, have the same appearances and staining reactions as these bodies, and he also calls attention to the fact that blastomycetes have been recently cultivated from a cancer of the uterus by Kabane, from a myxoma by Curtis, and from sarcoma of the mesenteric lymph glands by Corbelli and Frisco.

This work of Sanfelice is very interesting and sug-

gestive, although the evidence he adduces in support of his views is not convincing. It is a subject which certainly merits further study.

#### THE PRESENCE OF AN OIDIUM IN THE TISSUES OF A CASE OF PSEUDO-LUPUS VULGARIS.

Gilchrist and Stokes<sup>\*</sup> report the results of a careful study of the pathology of an interesting case of cutaneous disease.

The patient was an adult male, who presented on the face a condition which had many resemblances to cutaneous tuberculosis, while on the skin of one hand and of the scrotum there were the scars left by the healing of a process which the patient said had been the same as that on the face.

The disease had begun years previously as a "pimple," and had spread slowly. A microscopical examination of pieces of skin excised from the lesions "showed an hypertrophy of the epidermis throughout which numerous variously-sized, well-defined miliary abscesses were scattered." The epidermis was generally infiltrated with polynuclear leucocytes, while in the corium masses of granular cells and a few miliary abscesses were present.

In addition to this there were found, in the miliary abscesses and also among the granulation cells of the corium, numerous round and ovoid, refractive bodies, with double contour and 10 to 20 micro-millimetres in diameter. These oval bodies were also cultivated from the pus of the lesions upon the ordinary culture media. Their growth was best obtained on glycerine agar and on potato. On the culture media they grew slowly and formed grayish-white colonies, which eventually become confluent and formed a thick layer, firmly adherent to the surface of the medium. The multiplication of the organism in culture, was found, in general, to take place by the outgrowth of branching thread-like processes, with knob-like projections along their course. The latter develop into more or less independent oval bodies, very like those found in the tissues.

By the inoculation of various animals with the cultures, lesions similar in character to those found in the patient were produced, and the same organism was found in them as well as cultivated from them. The authors regard the parasite as an oidium, belonging to the class of the true fungi.

#### REPARATIVE PROCESSES IN BRAIN TISSUE.

Tedeschi<sup>\*</sup> has recently studied histologically the character both of the newly-formed tissue surrounding old hemorrhages, cysts and areas of softening, and of the reparative process following the destruction of brain substance by various agencies.

He has also examined the tissue formed around foreign bodies, using as the foreign body small plates of paraffine, which is a material excellently adapted for the purpose, for it opposes no obstacle to the passage of the microtome knife through it in the process of section cutting.

The results of this work are confirmatory of our present ideas in regard to the reparative and conservative processes in brain tissue. It is shown that as an immediate consequence of the destruction of brain substance a certain amount of the contiguous tissue undergoes degeneration or necrosis, while in the tissue

<sup>\*</sup> Johns Hopkins Hospital Bulletin, July, 1898.

<sup>\*</sup> Centralblatt für allgem. Pathologie, Bd. vii, Nos. 11, 12.

in the neighborhood an increase in the cells of the neuroglia, a proliferation of the endothelium of the vessels and a multiplication of the ganglion cells is soon apparent.

By the continued proliferation of the neuroglial cells, and of the endothelial cells, a neuroglial tissue is formed rich in blood-vessels, which fulfils the same purposes as scar tissue or granulation tissue in other situations. In this newly-formed tissue only a few nerve cells are found. These are not the survivals of the pre-existing elements but are really new cells, for they show different dimensions, shape and arrangement from those seen in normal tissue. Their presence, however, seems to have no connection with the disappearance of paralysis, following the injury to the cortex, for they are usually seen only long after motor functions have been completely restored in the animal.

#### ON A SPECIAL ACTION OF THE SERUM OF HIGHLY IMMUNIZED ANIMALS.

Durham<sup>4</sup> has studied an interesting action of the serum of immunized animals upon the bacteria against which they are immune. This action is best illustrated by the organism of Asiatic cholera. He has found that, if to a homogeneous suspension of cholera vibrios in a test-tube, there be added one per cent. of serum from an animal immunized against this organism, the vibrios aggregate together in clumps and masses after a few minutes and within an hour they have fallen to the bottom of the tube, leaving the fluid clear. The bacteria thus acted upon by the serum show loss of motility and marked degenerative changes under the microscope.

Similar effects were observed upon certain other vibrios, the bacillus of typhoid, the bacillus coli communis and the bacillus pyocyaneus, when exposed to the action of the serum of animals immunized against them. There seems to be a definite relationship between the amount or potency of the serum used, and the rapidity or completeness of the effect on the bacteria.

The experiments were fully controlled and the work reflects credit upon the author.

These phenomena are closely related to those observed in the so-called Pfeiffer's reaction for the differentiation of the cholera vibrio from allied species. Pfeiffer has shown that, when a suspension of true cholera vibrios, mixed with a minute quantity of the serum of an animal immunized against the cholera infection, is injected into the peritoneal cavity of a normal guinea-pig, they undergo marked changes in size and shape within an hour or so. This result is not observed, however, if the vibrios injected are not true cholera organisms, and on this account the "reaction" is of value in diagnosis.

Durham, who was led to take up the present study from some experiments with "Pfeiffer's reaction," is inclined to the view that the changes produced in the vibrios under these circumstances are due, not alone to the bactericidal action of the peritoneum, but also to the direct action of the serum injected with them. He does not claim, however, for the peculiar phenomena observed by him, any diagnostic value in cholera, for he has found that some vibrios closely allied to the vibrio of cholera react like the latter. On the other hand, he thinks that this action of the serum in

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test-tubes may be usefully employed as a ready means of testing the progress of immunization of an animal or the comparative potency of different kinds of serum from immunized animals.

It is worthy of note that a number of cultures of the typhoid bacillus and of the bacillus coli communis from various sources were tested with a view to determining whether the typhoid bacillus "reacted" with "coli communis serum" and *vice versa*, but with negative results in every instance, the suspension always remaining unchanged after the addition of the serum. This is another fact in favor of the view that these two organisms in spite of their superficial likenesses, are quite different species of bacteria.

#### THE TYPHOID BACILLUS IN OSTEOMYELITIS.

To the comparatively small number of cases of osteomyelitis, due to infection with the typhoid bacillus, in which the identity of the organism found was well authenticated, Bruin<sup>5</sup> contributes another.

The bone affected was the left tibia, which contained a cavity filled with granulations and a small quantity of bloody pus. From the material removed at the operation a bacillus was isolated which proved itself to be identical with the bacillus of typhoid fever, after having been subjected to a careful study.

A remarkable fact about the case was that the patient had had typhoid fever six years previously and an osteoperiostitis of the femur of the other limb during convalescence. There was also a history of pain in the left leg about the same time, which gradually quieted down, but had in later years recurred at intervals. This case seems to show clearly that the typhoid bacillus can survive in bone for an indefinite period without necessarily causing very serious disturbance.

#### THE ETIOLOGY OF CORTZA.

From a study of the bacterial flora of normal and acutely inflamed Schneiderian membranes Fermi and Breitschneider<sup>6</sup> conclude that there is no evidence to show that a "cold in the head" is due to any definite infection.

They reach this conclusion from the following considerations:

(1) The appearance of the disease often directly after exposure to physico-chemical influences, without being preceded by a period of incubation, which is characteristic of infectious disease.

(2) The fact that no one species of bacteria, known to be pathogenic, is constantly or even frequently associated with the disease. No striking difference was observed between the bacterial floræ of normal and discharging nasal cavities.

#### THE HISTOLOGICAL LESIONS IN THE SPLEEN, LYMPHATIC GLANDS AND LIVER IN DIPHTHERIA INFECTION.

This interesting subject has been subjected to examination anew by Barbacci<sup>7</sup> in a large series of human and experimental cases of infection with diphtheria. The results of his observations may be summarized as follows:

The toxine of diphtheria shows its most marked effects in the spleen and lymphatic glands, the lesions being most marked in the Malpighian follicles of the former and in the "germinative centres" of the lat-

<sup>4</sup> Annales de l'Institut Pasteur, April, 1896.

<sup>5</sup> Centralblatt für Bakteriologie, Bd. xx, No. 1.

<sup>7</sup> Centralblatt für allgem. Pathologie, Bd. vii, Nos. 8, 9.



ter. The nuclei of cells are most susceptible to the poison.

The effects observed in the nuclei are variable; most frequently consisting in a breaking up ("nuclear fragmentation" or "karyolysis"), less frequently in mitotic or proliferative changes. In the liver a small cell infiltration in the perilobular connective tissue was found in almost all cases, while in the epithelial cells edema of the nucleus and cytoplasm was of frequent occurrence.

The effects of the toxins are not confined to the fixed tissue cells, however, but are also very marked on the leucocytes. In the spleen large numbers of these were found, often showing degenerative changes in their nuclei of a striking character.

### Reports of Societies.

#### BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. G. MUMFORD, M.D., SECRETARY.

REGULAR Meeting, Monday, April 6, 1896, Dr. C. J. BLAKE in the chair.

DR. J. J. PUTNAM read a paper on

#### THE RESPONSIBILITIES AND OPPORTUNITIES OF PHYSICIANS TESTIFYING AS EXPERTS IN CASES OF TRAUMATIC PSYCHOSIS.<sup>1</sup>

DR. WALTON: The most interesting feature to me is the advance that we have made with regard to this whole class of cases. I can remember when all these cases, which Dr. Putnam considers psychoses, were considered to be due to concussion of the spine. At that time a person who ventured to consider any of them hysteria would be held up to ridicule. I remember not many years ago being rather severely taken to task for classing a case under this head, about which to-day there would be little diversity of opinion. That time is pretty well passed. I rarely hear the diagnosis "concussion of the spine" in the courts, but there seems to be just as marked a difference of opinion as to the severity of these cases as there used to be; so that it seems, after all, that we have not got together, although I agree on the desirability of the experts getting somewhere near together on the question. How shall we weigh these mental symptoms? For example, a case came up not long ago in the courts which has been reported since at one of the meetings. The patient claimed he could not see with one eye. It was proved by the ordinary tests which oculists have been in the habit of applying that he did see with that eye when both eyes were open, that is, the ordinary tests for discovering whether a person sees with the so-called blind eye, showed that the vision was not lost. This was allowed, as I understand it, by the experts for the plaintiff; but it was claimed he did not realize that he saw, that is, that he had hysterical blindness—in other words, a loss of power of the higher psychical centre which governs vision. One side considered that he was a simulant, the other that it was a case of hysteria. The jury gave large damages. Here were two widely diverse views practically, though the experts all agreed on the facts, and

I fear that such differences in the analysis of symptoms will always exist.

Again, about this question of how long these symptoms last I do not think we shall be able to determine that question except in a very general way. We sometimes see cases out of the courts of broken-down women, in whom a slight local injury is the occasion of localizing the symptoms. In one such instance hysterical swelling appeared in a wrist after moderate strain. This patient had hemianesthesia, if I remember rightly, and other symptoms of hysteria, some of which could not have been other than genuine, for instance, this puffiness of the hand. Her history pointed to the fact that her nervous system was already overtaxed and on the point of giving way. The whole condition could hardly be attributed to falling and hitting the hand, though it was the occasion of the onset of some, at least, of the symptoms. Now we see cases of broken-down women who have hysterical symptoms lasting for years, without accident, and I am not sure in every case of accident that the accident is the sole and only cause, and I fancy that in some cases we can never decide the question absolutely.

I was interested recently to see an elaborate report showing that they are going through the same questions in France—quite a lengthy report of a number of physicians who examined a man who was in an accident. He was reported as cured at the end of a month by his physicians. He was examined later by various experts. One expert found his nervous system was entirely broken-down by this accident. Three other experts examined him, and decided that the man had recovered from the effects of the accident within a month, but then staid at home in very faulty surroundings, had not eaten decent food, had not air or exercise, contracted diarrhea, and was in a state of neurasthenia and general malaise and bad digestion, due to his surroundings but not due to the accident. This opinion was attacked by the physician who represented the claimant, who said that if he had neurasthenia it was illogical to deny that it came from the accident, inasmuch as it followed it.

There is a chance to take two diametrically opposite views where the physicians may be agreed as to the condition existing. The question of the use of the word "cause" comes in, and we cannot be too careful how we use this word. A person is already perhaps broken-down or predisposed to have nervous symptoms produced by the slightest touch; he receives that touch; this draws attention to that part of the body, and he proceeds to have hysterical symptoms. To approach such a case as an expert and simply give the opinion that that touch was the cause of his hysterical symptoms does not satisfy me. As a not unfair *reductio ad absurdum* I would make the following supposition: Suppose a man should run against a church and it should tumble down about him, and a commission was appointed to discover what made the church fall. It would be rather a crude and unscientific, not to say ridiculous, report to say it fell because the man ran against it. They would report rather that it was out of plumb, that the underpinning was faulty, etc., and that it was just on the point of falling and might have fallen if it had not been touched, or possibly that this accident might have been the exciting cause. Some of the nervous cases, in which the trauma is manifestly inadequate, we ought to approach in the same way. We ought

<sup>1</sup> See page 403 of the Journal.



rather in our report to bring in all the etiological factors. We should not feel that we represent the whole of the law and justice, and that the jury may draw this or that inference if we state all the facts. We should, of course, if we believe the accident to have been the sole cause, say so, otherwise mention all the facts bearing on the case and let the jury decide whether a touch or slight blow on such a predisposed person is worth much or moderate or no damages. I think one of the dangers in giving expert testimony is the tendency for the expert to feel that he carries the whole case on his shoulders and must decide questions that ought to be left to the jury.

As to deliberate coaching of patients by physicians, I do not think that I have ever seen any case where I supposed this was done. I do think, however, that patients in this highly susceptible condition are extremely apt to be coached by the mere examination. I remember a patient who made no claim of deafness till after my first examination. On going through the routine tests of his senses I found that he heard the watch perhaps one foot on one side and two on the other, a fact which had escaped his notice. When I saw him later he claimed he could not hear at all in this ear, and bore himself like a deaf person. In answer to my question how long this had lasted, I was told it was ever since the accident. I think I had involuntarily coached him. I think many of these patients learn of the symptoms in these cases and that they sometimes last a long time, a knowledge which predisposes them to have them, that is, such subjective symptoms as hemianesthesia. If patients know that such symptoms are worth large sums of money it certainly would not detract from this receptive state of mind, though it might not consciously influence them.

I agree that an early settlement is advisable in all these cases where it can possibly be brought about; and it seems to me that where we can produce an early settlement we will tend to cause more rapid recovery even when conscious simulation does not come into the case. With regard to litigation symptoms, it has been said that the symptoms which come from this source ought to be paid for if a person cannot get his money without litigation, but this is a question for the courts, not for an expert, to decide. Whether this is true or not, I think we should state the facts to the jury and let the jury decide upon them under their instructions from the court, feeling that we have done our duty whether our ideas of justice prevail or not.

DR. A. H. NICHOLS: Notwithstanding the failure to carry through in this State any of the proposed schemes designed to raise the standard of medical expert testimony, it has nevertheless undergone by the action of physicians themselves a noteworthy improvement. It is not now uncommon to hear an opinion given by physicians called nominally in behalf of one party, which opinion impresses all concerned as impartial and conclusive. On the other hand, perplexing, complicated cases must arise in which the most divergent views will be maintained, and where no individual opinion can carry very much weight. It is especially gratifying that no longer can a physician act openly in court as a medical counsel, and subsequently pose in the same case as an unbiased expert. A recent violation of this unwritten law subjected the luckless offender to humiliating rebuke. There can be no question as to the deleterious effect of impending

litigation upon certain nervous disorders; and it has got to be pretty well understood by the laity that there exists no more potent element in causing the persistence of many nervous disorders than the ill-advised suggestions and adverse influence of a pessimistic medical attendant having his eye on the spoils of a protracted lawsuit. A commendable custom has been established in Colorado, in accordance with which the medical witness is permitted at the close of his testimony to volunteer any statement, such as may in his judgment serve to further enlighten the jury or render unequivocal his own position.

DR. PUTNAM: I agree with Dr. Nichols, in a way, that the testimony has improved very much of late years, and that although possibly a better system might be devised, it is hard to say it would work practically as well. Nevertheless, I think the present system is theoretically good and practically not good. Theoretically, we all go into court with the intention of enlightening the jury as well as we can. I find it hard to do so, as I do not find the lawyers make it easier. I want to induce experts to come together oftener and make them agree to state so far as they can both sides, and urge that they shall have the privilege of stating both sides. I think it is important that plaintiffs should be excused from staying in the court-room while their cases are discussed, and in the examination of cases we should do our best not to make suggestions. Where there is a divergence of opinion, that divergence should be stated. I think if we take the position that we wish to have the opportunity to talk about the case in all matters that are medically of interest, our testimony would be of more value.

DR. STEDMAN read a paper on

#### PROGNOSIS AND DURATION OF ACUTE ATTACKS OF MENTAL DISEASE.

DR. GORTON, of Providence: I am obliged to say at the outset that I labor under the disadvantage of having had no knowledge of the way in which Dr. Stedman was to treat his subject until I heard the paper this evening. After what Dr. Stedman has so well said, it seems hardly necessary to repeat that the prognosis in insanity is often quite difficult. Of course, the members of the Society know that under the term insanity so many different mental states are included that in dealing with so delicate and important a question as prognosis, we should be quite careful to define the cases of which we speak, and do what Dr. Stedman has so clearly done, put out of consideration those organic conditions in which from the first the prognosis, so far at least as a cure is concerned, is obviously bad. With the other forms of mental disease, while we may speak with some positiveness, we must still be always guarded in expressing an opinion, both as to duration and as to result. Almost the last occasion on which I met the late Dr. Goldsmith, he told me that his experience had been such that he had almost decided never to express any prognosis. I do not think it is so much in the really acute mental affections that the prognosis need be a matter of difficulty to the general practitioner, as in those cases to which Dr. Stedman has alluded as beginning with systematized delusions — that is to say, cases in which the patients begin to withdraw from general society, or perhaps at first only from the immediate family circle and to live by themselves without reason, obvious or expressed.

This conduct — simple eccentricity, as it is too often

at first regarded by the friends — gradually goes on to more pronounced peculiarities, perhaps to absolute isolation, to extravagances in dress, to delusions about food and drink, to irritable outbursts, at first from some slight actual friction, later from no cause beyond the delusions. The outbreak is too often accepted by the friends and the family physician as the beginning of the trouble, and a favorable prognosis expressed, whereas it is but a rather late manifestation of an exceedingly chronic and in most cases incurable affection.

My own experience has been that errors in prognosis have been more frequent in this form of mental disorder than in all others. If in addition to the symptoms I have mentioned, hallucinations of hearing can be established, you should always give an unfavorable prognosis. Great doubt often exists in cases of general paralysis beginning with an acute maniacal attack. If the motor symptoms are not well marked it is impossible to be sure of the prognosis, though in any maniacal condition, occurring in a male patient between the ages of thirty-five and fifty, preceded by a history of syphilis, one ought to be guarded in his opinion.

As to the acute insanities, so-called, it seems to me that Dr. Stedman has said about all that our present knowledge of these conditions will permit. The notion that there can be any time limit set as to the hopeful duration of any such case is pretty conclusively set aside by the case to which he has alluded.

I once had a case of chronic delusional melancholia, with most unfavorable manifestations, including hallucinations of hearing. The patient for nearly five years had the delusion that she was the devil, that her body was only a dead envelope for his satanic majesty, that she could see no one and touch no one without contaminating him, and that she must live throughout eternity in this condition. I did not hesitate to give an absolutely unfavorable prognosis, and yet the patient ultimately made a complete recovery. Sometimes in certain cases simulating general paralysis, the most experienced will err. Of course in a well-marked case the diagnosis is easy and the prognosis certain, but Dr. Jelly will recall a case which he examined with great care and certified as a case of general paralysis. The patient was committed to the Danvers Hospital where he was examined by Dr. Goldsmith and myself, and the diagnosis of paresis was confirmed and an absolutely unfavorable prognosis expressed. In six weeks the case entered upon what we confidently pronounced a remission. This delusion having subsided, his wife, against our advice, and to our actual horror, took the patient from the hospital. She took him to the country town where they had formerly resided, and he has remained well, so far as I can learn, for more than ten years.

A similar experience was undergone at the Danvers Hospital with another case of suspected general paralysis.

Outside of the organic insanities, unless we feel sure of actual dementia, it is hardly just to the patient or to ourselves to express a positive prognosis. We should be content to speak of the probabilities.

Dr. Stedman has treated the question of the significance of heredity most clearly. I am pleased to see that he has attempted to show what I believe to be true, that the prognosis of insanity in a person in whose family there may be a history of mental disease is not necessarily worse on that account. In the person with the so-called hereditary predisposition, you have

a mental organism which reacts more easily to stimuli than a more stable brain, and in that fact lies very often the hope of a favorable result. Such cases may relapse it is true, but, for the reason that a slighter mental shock may induce the mental explosion, the restoration of the mental equilibrium is even more likely to occur than in cases induced by such a profound disturbance as may almost amount to organic disease.

The insanity of the adolescent and the climacteric period should always call for a guarded prognosis, as at these crises of life a mental storm is apt to develop any degenerative tendency and to result in permanent mental weakness.

One thing that the general practitioner should never do in any case of insanity, no matter how simple it may seem to be, is to say to the friends, "this is not a serious matter, place the patient in a hospital under proper treatment, and he will get well in three or four weeks." From such inconsiderate advice every hospital physician has seen much suffering in the past of the friends from hope deferred, and often has experienced difficulty in the management of the patient through the meddlesome interference of friends who have been led to expect too much. One word as to hospital statistics in relation to recovery from mental disease. I am free to say that on the face of them they are discouraging enough, but the discouragement is really not so great as a superficial view would lead one to believe. To those outside a hospital a case is likely to be a case, since all are committed as insane, and the idea that as much is to be hoped for in one as another, seems to be quite generally entertained by most of those who have been good enough to favor us with their criticisms. It is only one who has lived in a hospital for the insane long enough to see that the wrecks of humanity, in whom the insanity justifying their commitment is but the last of a long series of bodily and mental disasters, constitute the larger element of the population of nearly all the great public institutions, and form the incurable residuum which casts so much obloquy upon statistical results of hospital work, who can properly criticize or intelligently discuss these results.

Statistics are valuable, and statistical methods are probably, on the whole, the best in reaching large results, but the basis of computation must be understood both by compiler and critic if the word of the latter is to properly supplement that of the former, and be taken as the measure of hospital usefulness or the reverse.

#### MAINE MEDICAL ASSOCIATION.

FORTY-FOURTH ANNUAL SESSION, PORTLAND,  
JUNE 3, 4, 5, 1896.

THE Association was called to order at 10 o'clock, Wednesday, June 3d, by the President, DR. L. W. PENDLETON, of Portland. After prayer by the REV. JOHN CARROLL PERKINS of the First Parish Unitarian Church, the disposal of business was in order, including the Treasurer's Report.

DR. E. H. BENNETT, of Lubec, read a statistical paper upon

#### THE NECESSITY OF COUNTY MEDICAL SOCIETIES IN MAINE.

Its apparent object was a consideration of methods of increasing the membership of the State Association.

## INFANTILE ECZEMA,

was the title of a paper by DR. W. D. WILLIAMSON, of Gorham, N. H.

In treatment calamine and zinc oxide and lead lotions were made prominent. Ointments to be efficacious must be well made and kept constantly applied.

In the discussion of the paper stress was laid upon the value of thorough washing at birth as a preventive of skin irritations and eczematous inflammations.

DR. ALFRED KING, of Portland, said the whole treatment might be summed up under five indications: cleanliness, antiseptis, anesthesia, astringents, protectives.

On recommendation of the Board of Censors twelve new members were elected.

The Association adjourned at 11 o'clock to the Maine General Hospital, where clinics were held and the members shown demonstrations of antiseptic methods in surgery and surgical dressings.

## AFTERNOON SESSION.

The Association met at 3 o'clock, and the President, DR. LEWIS W. PENDLETON, of Portland, delivered the

## PRESIDENT'S ADDRESS.

Among its recommendations were suggestions that the Association take some measures to bring into its membership the large number of desirable men throughout the State who are not affiliated; the establishment of district hospitals throughout the State, especially in the manufacturing communities; and the preservation of biographies of the older and prominent members of the Association. Action was subsequently taken by the Association, providing for committees in charge of each of these matters, upon recommendation of the special committee to which the address was referred.

DR. J. F. MANNING, of Ellsworth, read a paper upon the topic

## SHOULD THE INCREASING TENDENCY TO SPECIALTIES IN THE MEDICAL PROFESSION BE ENCOURAGED?

The paper was a strong argument in favor of the proposition.

Discussion brought out the sentiment of the Association, that while specialties were valuable and useful within certain lines, no one ought to enter upon practice devoted exclusively to special branches until qualified by at least five years of general practice; and the opinion was made a matter of record by the adoption of a formal resolution to that effect.

The Secretary, DR. C. D. SMITH, of Portland, called the attention of the Association to the efforts which were being made to secure the passage by Congress of Senate Bill 1552, which was practically an effort to limit and destroy the value to be derived from experimental study upon animals in the District of Columbia.

On his motion, the Association unanimously adopted resolutions condemning the proposed bill as unwise and unnecessary, and as a menace to the interests of scientific medicine.

The Secretary was instructed to forward copies of the resolutions to the Maine Senators and Representatives, and request them, in the name of the Association, to oppose, so far as possible, the passage of this bill.

DR. G. A. PHILLIPS, of Ellsworth, read a paper

— on the ever-recurring topic of

## CRIMINAL ABORTION.

His conclusions, drawn from correspondence with a large number of physicians all over the State, were that the great proportion of abortions from all causes were criminal. That the percentage of deaths was not over two per cent., and that 49½ per cent. of the women were permanently injured in health.

The inaction of the State in inaugurating some radical measure to check this waste of life and injury to health was contrasted with its great expenditure of labor and money for the protection of fish and game. From the discussion the conclusion might be drawn that the reasons for the prevalence of this practice could be found in the law of demand and supply, and that public sentiment is in the main favorable, or at the least indifferent.

A motion that a committee be appointed to memorialize the Legislature failed of consideration.

## THE SIGNIFICANCE OF A PURULENT DISCHARGE FROM THE NOSE,

was the title of a paper by DR. IRVING E. KIMBALL, of Portland.

Purulent rhinitis, foreign bodies and diseases of the accessory cavities, were the causes considered, with special attention directed toward the latter. Transillumination by electric light held in the oral cavity, and exploratory puncture by Krause's trocar through the middle meatus were given as diagnostic methods in disease of the antrum. Free opening, curetting, antiseptis and drainage were urged as treatment for the chronic form. Opening through the canine fossa was preferred.

In chronic suppurative disease of the frontal sinuses, free drainage is imperative, and it is best secured by perforation through the inner wall of the orbit immediately below the eyebrow. Opening may be made into the sphenoidal sinuses through the nasal cavity.

In the discussion, DR. THOMAS FILLEBROWN, of Portland, spoke of the anatomical relation of the antrum to the frontal sinus, demonstrating by several specimens the existence of a direct conduit from sinus to antrum, the infundibulum terminating in an open groove leading directly into the antrum. Most anatomists consider this condition an anomaly; if so, it was curious that he had found eight consecutive cases with the groove fully developed, and not a single specimen without it. He thought the ridge of the alveolus the best region through which to establish drainage, especially in cases requiring prolonged treatment, as most of these do.

DR. S. H. WEEKS, of Portland, said he preferred not to extract the tooth, but to perforate directly through the canine fossa, making a large opening, followed by thorough antiseptic washing and packing.

DR. G. M. ELLIOTT, of Brunswick, read a paper on

## PULMONARY TUBERCULOSIS.

He thought the tuberculous condition more often transmitted to the offspring than the so-called tubercular tendency. Some inflammatory condition was regarded as always necessary to act as an exciting cause in addition to predisposition and the presence of tubercle bacilli.

DR. W. J. MAYBERRY, of Saco, thought the weight of evidence leaned toward the "acquired" theory. There were ways enough in which the infant, no matter how young, could contract the disease.

DR. B. T. SANBORN, Superintendent of the Maine Insane Hospital, said there had been a great falling off in the number of cases at the hospital. He attributed it to the use of thorough steam disinfection of all clothing, bedding and rooms, for a long time practised there in all kinds of cases.

#### LESSER ERRORS OF REFRACTION AND THEIR EFFECTS UPON THE SYSTEM,

was the title of a paper by DR. W. B. MOULTON, of Portland. He urged a more careful attempt to correct even the least errors, believing that none could be wisely neglected. It was stated that the amount of refraction as shown by careful tests bears no constant relation to the amount of disturbance which it produces.

DR. E. E. HOLT, believed that the lesser errors were more frequently the cause of asthenopia and reflex disturbance than greater ones. He thought much harm was done by the prescription of glasses by opticians, likening it to the prescription of medicine for disease by apothecaries. He explained the greater influence of lesser errors in causing reflex disturbances, upon the ground that accommodation was more constantly exercised, without relaxation during the waking hours. In the greater errors more opportunity was given for rest.

DR. MOULTON, in closing, said he did not wish to be understood as advocating impossibilities. No man could accurately estimate beyond a quarter of a diopetre.

#### SECOND DAY.—MORNING SESSION.

Reports of delegates and other routine business.

DR. F. E. VARNEY, of North Chelmsford, Mass., read a paper on the topic

#### SHOULD PHYSICIANS DISPENSE THEIR OWN MEDICINES?

The argument was strongly in the affirmative, for reasons of less liability to error, saving of time, and securing to the physician more certainty of his fee. This method was also recommended as a panacea for "the evils of hospital abuse, drug-store doctoring, the system of druggists' commissions, counter prescribing, refilling of prescriptions and substitution." The present form of tablets and granules makes this practice easy.

DR. F. H. GERRISH thought the identity of physician and pharmacist should be kept distinct whenever it was possible. He thought the country practitioner dispensed his own remedies not from choice but from necessity. Emergencies require every man to have at hand a few essentials. He thought "that, wherever possible the druggist and physician should occupy distinct but adjacent domains which touched all along the border."

Dr. Gerrish's view was supported by several country practitioners, one of whom said that during his practice of many years he had spent from twenty-five to fifty thousand dollars for drugs, most of which had never brought anything like an adequate return.

#### INTESTINAL INDIGESTION,

was the subject of a paper by DR. C. E. WILLIAMS, of Houlton. Dietetic and hygienic measures were placed above drugs in treatment.

INTUBATION, WITH AN ANALYSIS OF FIFTY CASES, was the title of a paper read by DR. E. M. PLUMMER, of Charlestown, Mass, which compared the advantages

and disadvantages of this method of relieving laryngeal stenosis with those of tracheotomy, greatly to the credit of intubation.

DR. S. H. WEEKS, of Portland, thought intubation best adapted to the simpler cases, but preferred tracheotomy for severe cases, and always in diphtheria.

#### AFTERNOON SESSION.

Delegates from other medical societies were introduced, and invited to participate in the discussions of the meeting. Those present were Dr. J. F. Young, from Newburyport, Mass.; Dr. L. J. Frink, from Bartlett, N. H., and Dr. Henry DeW. Carvelle, from Manchester, N. H.

A resolution was introduced and unanimously adopted criticising those life insurance companies which have reduced the fee for medical examinations, requiring an analysis of urine from five to three dollars, and advising members to refuse to cheapen professional work by rendering their services for such reduced fees.

The annual election of officers resulted as follows:

President: Dr. D. A. Robinson, Bangor.

Vice-Presidents: Drs. E. H. Bennett, Lubec; G. A. Phillips, Ellsworth.

Corresponding Secretary: Dr. G. M. Elliott, Brunswick.

Board of Censors: Drs. C. O. Hunt, Portland; Alfred Mitchell, Brunswick; J. L. Bennett, Bridgton; B. F. Bradbury, Norway; W. B. Moulton, Portland.

Committee on Publication: Drs. C. D. Smith, Secretary (*ex officio*); A. S. Gilson, Portland; Henry H. Brock, Portland; W. P. Giddings, Gardiner; Alfred Hitchcock, Farmington.

Business Committee: Drs. Alfred King, Portland; E. J. McDonough, Portland; The Treasurer, Dr. Aug. S. Thayer, and the Recording Secretary, Dr. C. D. Smith, both of Portland, continue.

DR. WM. B. SMALL, of Lewiston, read a paper on RECENT PROGRESS IN THE DIAGNOSIS AND TREATMENT OF DIPHTHERIA.

Its conclusions were pronounced in favor of antitoxin, as being more efficacious in diphtheria than any remedy heretofore employed, as exerting a decided influence in preventing laryngeal and tracheal complications, and diminishing the frequency of albuminuria and post-diphtheritic paralysis.

The prevention and cure of laryngeal diphtheria without intubation or tracheotomy and the shortening of the period for wearing the tube when demanded are among the most striking and convincing results of this treatment.

DR. A. G. YOUNG, Secretary of the State Board of Health of Maine, confirmed by statistical annotations the conclusions of the paper. He said that two deaths, at least, attributed to antitoxin, had been reported in France, neither of which closely followed the use of antitoxin. Roux's preparation was used. In one case four doses had been given, and anuria followed each of the last three. In the other case convalescence was progressing favorably, but death occurred about a week after the injection.

As bearing upon the case of the twenty-one months' old child of Professor Langerhans, in which death was said to have been instantaneous, it should be said that only prussic acid could cause so sudden a death.

Eulenberg attributed this death to embolus or entrance of air into the vascular system.

DR. SMALL, in closing the discussion, referred to intra-vascular injections which had been made to prove the innocuous character of antitoxin. Into the venous circulation of guinea-pigs there was injected antitoxin with no effect whatever; carbolic acid resulting in tetanus and finally recovery; air resulting in death instantaneously.

The Association adjourned at 4 o'clock, and were entertained by the physicians of Portland until the evening session, at the Casino, on Cape Elizabeth, a short distance from the city.

An elaborate banquet was served, and post-prandial speeches were made by President Nathaniel Butler, of Colby University, Waterville; Hon. A. R. Savage, Auburn; Rev. J. L. Jenkins, D.D., of Portland; and W. M. Bradley, Esq.; and a humorous poem was read by L. L. Hight, Esq., of Portland.

#### EVENING SESSION.

The evening session was opened at 8 o'clock, and the annual oration was delivered by A. PALMER DUDLEY, M.D., of New York, his subject being

#### ANCIENT MEDICINE AND SURGERY AS COMPARED WITH THAT OF THE PRESENT DAY.

Following the oration, the Association was entertained until a late hour by practical demonstrations of the application of the Röntgen rays, by Professors F. C. Robinson and C. O. Hutchins of the Bowdoin College Laboratories.

#### THIRD DAY. — CLOSING SESSION.

The Association met at 10 o'clock, and after the transaction of the routine business, listened to the final report of the Board of Censors, which was as follows:

The date of the next annual meeting will be June 2, 3, 4, 1897; and the place of meeting, Portland.

No appointment of "Orator" was made, the Association having instructed the Censors to invite some eminent medical gentlemen from out of the State to address the Association, at the next annual meeting.

Appointments were made as follows:

Visitors to the Maine Insane Hospital: Drs. E. M. Fuller, Bath; J. L. Bennett, Bridgton; John N. Merrill, Skowhegan.

Portland School for Medical Instruction: Drs. F. I. Brown, South Portland; C. E. Wilson, Hiram.

Medical School of Maine: Dr. G. M. Woodcock, Bangor, for two years; Dr. W. K. Oakes, Auburn, for one year.

Delegates to the American Medical Association: Drs. Alonzo Garcelon, Lewiston; S. H. Weeks, Portland; F. C. Thayer, Waterville.

New Hampshire: Drs. J. D. Holt, Berlin; Geo. H. Shedd, North Conway.

Vermont: Drs. S. C. Gordon, Portland; C. G. Adams, Portland.

Massachusetts (1897): Drs. Addison S. Thayer, Portland; F. H. Gerrish, Portland.

Rhode Island: Drs. E. M. Plummer, Charlestown, Mass.; Alfred Mitchell, Brunswick.

Connecticut: Drs. Stanley P. Warren, Portland; C. A. Ring, Portland.

Medical Society of the State of New York: Drs. I. E. Kimball, Portland; Alfred King, Portland.

New Brunswick: Drs. J. A. Walling, Millbridge; J. M. Jonah, Eastport.

Maritime Medical Association: Drs. W. P. Giddings, Gardiner; H. H. Smith, Machias.

After accepting the report and confirming the appointments, the Association adjourned until June 2, 1897.

### Recent Literature.

*A Text-Book of the Physiological Chemistry of the Animal Body, including an Account of the Chemical Changes occurring in Disease.* By ARTHUR GAMGEE, M.D., F.R.S., Emeritus Professor of Physiology in the Owens College, Victoria University, Manchester, etc. Vol. II, The Physiological Chemistry of Digestion. 8vo, pp. xx, 528, illustrated. London and New York: Macmillan & Co. 1893.

*A Text-Book of Physiological Chemistry.* By OLOF HAMMARSTEN, Professor of Medical and Physiological Chemistry in the University of Uppsala. Authorized translation from the second Swedish edition and from the author's enlarged and revised German edition, by JOHN A. MANDEL, Assistant to the Chair of Chemistry, etc., in the Bellevue Hospital Medical College and in the College of the City of New York. 8vo, pp. x, 512, with a plate of Spectra. New York: John Wiley & Sons. 1893.

*The Essentials of Chemical Physiology.* For the Use of Students. By W. D. HALLIBURTON, M.D., F.R.S., Fellow of the Royal College of Physicians, Professor of Physiology in King's College, London, etc. Second edition, 8vo, pp. xii, 170, illustrated. London, New York and Bombay: Longmans, Green, & Co. 1896.

*Handbook for the Bio-Chemical Laboratory.* Including Methods of Preparation and Numerous Tests, Arranged Alphabetically. By JOHN A. MANDEL, Professor of Chemistry at the New York College of Veterinary Surgeons, and Assistant to the Chair of Chemistry, etc., at the Bellevue Hospital Medical College and the College of the City of New York. 12mo, pp. 101. New York: John Wiley & Sons. London: Chapman & Hall, limited. 1896.

In the first of the works before us Professor Arthur Gamgee continues the great task he has undertaken, a task which has become very much more severe in the years which have elapsed since the publication of the first volume of his book in 1880. In that he completely surveyed the proteids and the elementary tissues of the organism with full reference to the original authorities. The present volume contains the physiological chemistry of digestion treated in the same elaborate manner, and gives a complete view of the subject, not only in its physiological but pathological relation. In his preface the author writes: "I have written not merely as a scientific chemist, but from the standpoint of the physiologist, and I have treated with especial care all subjects which are of interest to the pathologist, the pharmacologist, and the scientific physician." As examples of the accuracy of this statement the accounts given of jaundice and gall-stones may be referred to. Noun's theory of the origin of the latter is appreciatively discussed, "that it is due to an infection of the

gall-bladder and biliary passages, by the migration into them of organisms existing in the duodenum, of which some exert a pathogenic influence on the mucous membrane, this migration being facilitated when the flow of bile is diminished." The organism exerting the influence in question is supposed to be the ubiquitous bacterium coli commune.

It is to be hoped that Professor Gamgee's hope may be fulfilled, "after the publication of a second edition of Volume I, to complete, by an equally thorough study of other great animal functions, my survey of the physiological chemistry of the animal body." We can assure him he can quite safely "trust that the present volume may, like its predecessor, further the advancement of, and prove not altogether unworthy of the present position of physiology in England."

Hammarsten's "Text-Book of Physiological Chemistry" is well known in Sweden and in Germany, where since the publication of the first edition in 1890, two others have appeared, all by the author himself. It is to be regretted that the English translator did not wait for the author's revision of the first German edition before completing his work, which, nevertheless, is of distinct value, as the famous Swedish physiological chemist's book is an admirable general account of his science, the pathological aspects of which are also discussed.

The book is sufficiently full for most requirements of student or physician, although not claiming that place in the research laboratory which Gamgee's work so well fills. Directions for practical work are given, and are particularly full in relation to the urine.

It is to be regretted that the rendering of German into English has not been more successful, resulting as it does, for example, in such a sentence as—"If the blood-circulation of a dog is cut off between the liver and intestines and the blood allowed to flow only through the head and the viscera of the thoracic cavity, the coagulation of the blood is destroyed" (p. 55). This, however, is worse: "But, as in regard to the peptones, whose formation in the digestion was considered as taking place especially in the interest of a facilitated osmosis and filtration, but whose conditions have been found quite different and much more complicated, so in the absorption theory there is a still greater contrast between former and present views" (p. 231).

Professor Halliburton's "Essentials of Chemical Physiology" has so soon reached a second edition that it is evident its merits are well appreciated by students. Directions for practical work in the laboratory are what make it especially valuable, but there is, in addition to these, sufficient theoretical description and discussion to make the book a useful compendium of this side of the subject as well.

The "Handbook for the Bio-chemical Laboratory" certainly deserves its title, containing as it does, in a handy form, various methods of preparation and descriptions of the properties of the more important proximate principles of the animal body, and a large number of tests arranged in alphabetical order under their authors' names. The work seems on the whole to have been well done, a striking omission, however, being the absence of all reference to albumoses. The properties, too, of peptones are not described, nor is the usual well-known test for these with fixed caustic alkali and copper sulphate given with its proper interpretation as indicating either albumoses or peptones.

THE BOSTON

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**BOSTON PUBLIC INSTITUTIONS.**

FROM statements in certain of the daily papers it would appear that the public institutions of Boston, so well started on a course of improvement, are about to be checked in their good work by renewed investigations. It is altogether to be hoped that the matter may become no more portentous than it is at present, and that the agitation may be checked at once, before it has begun its insidious work of exciting dissatisfaction among the inmates of the institution concerned, and that sense of uncertainty among the officers in charge, which so materially affects the best performance of their duties. It is self-evident that the present disturbance foreshadowed by trouble at the Marcella Street Home, in no way concerns principles of institution management. The question is not now whether public institutions shall have as their organized head a board of trustees or a single commissioner. To any one who has followed the matter during the last year it must be clearly evident that under the present administration of the institutions a distinct and steady progress has been observable toward improvement in various lines, and this fact should be appreciated by the public at large, and particularly by that portion of the public represented by the medical profession. We should not for a moment go so far as to say that anything approaching an ideal condition has been reached, but only that there has been a constant progress toward better things, and that such progress should not be checked by an agitation finding expression in the public prints, which can only tend to destroy the confidence which has been taking stronger and stronger hold upon the public mind.

It is quite undeniable that investigations of a most rigorous sort, and upheavals of existing conditions are often in place and must meet with the approval of all right-minded citizens. When the conduct of an institution is bad, when those concerned in its management, in whatever capacity, are vicious or

incompetent, and progress is retrograde, there is but one course to pursue, and that is to investigate conscientiously and reform at whatever hazard. Our public institutions are clearly in no such condition now. On the contrary, an earnest attempt has been and is being made to better their condition and their efficiency. Progress may, for sundry reasons, have been slow in some cases, but it has been certain and definite to any one who has taken the trouble to inform himself upon the matter. If this be the case, it must be the duty of the body of physicians to whom these remarks are chiefly addressed, to help on the good work already well under way by discouraging any attempt to check its progress.

Unnecessary investigations are recognizedly pernicious. Especially to be deprecated are investigations which look for faults and have no eye to merits. Errors may and should always be unearthed, but the inevitable danger is, that in the methods taken to disclose a minor fault real harm of a most positive sort may be done, and the ultimate outcome be altogether detrimental to the cause of true reform. Such a result is no doubt possible with the best of motives. The hypercritical investigator is not infrequently a real menace to the welfare of the cause he is most conscientiously supporting. Unquestionably this is true in the complicated mechanism of a public institution, in which a difficult and discontented class in the community is being cared for, and in which discipline is so absolutely necessary to success of management. Should, however, investigation become necessary, it should be carried on openly and by methods of a recognized sort. Beyond measure dangerous is the method not infrequently in vogue, we regret to say, of appealing to the prejudices of the vicious or discontented or diseased, whose testimony in a court of law would never be received. Prejudice is inevitable and it must of necessity warp the judgment of the half-educated outcast, who is so frequent an inmate of our institutions. A man who is vicious and has an end to subserve is notably a false witness, and it is equally true that a person who is irresponsible through disease is not to be taken as a criterion of truth or justice. It is, unfortunately, a not unnecessary warning to say that a person suffering from paralytic dementia, or the effects of alcohol or cerebral syphilis, or imbecility, or mental disturbance of any sort is to be absolutely excused from the right of giving an unbiased opinion. The courts recognize this fact. Why should not investigators and the people whom such investigators influence?

At present our institutions are doing good work. Their faults no doubt are still manifold, but we must protest against the spirit which, judging from newspaper reports, is again abroad, of magnifying their faults and minimizing their virtues. Under the existing condition of things, such a course can only be detrimental to their further progress. And this is a matter in which the physicians of Boston have shown a very particular interest. Many of them have helped

on, by their individual and combined effort, a work and policy which they have felt on the whole to be productive of a lasting good. Take, for example, the hospital for paupers on Long Island. It is no doubt generally known to the profession that a year or more ago the Institutions Department appointed a number of physicians in good standing, whose function should be that of a visiting staff. Out of this has grown, chiefly through the instrumentality of the Superintendent of Long Island, a training school for nurses, whose efficiency has done much toward helping on the work of the hospital. The improvement at the institution has been evident, and it was inevitable. An almshouse has been transformed into a hospital in a remarkably short space of time. This is but one example of the improvement which to the best of our knowledge has spread through all the institutions.

In the face of such facts there can be but one opinion of the unwisdom of holding up before the public the faults which still exist, and thereby obscuring the good which is being done, and hindering its further prosecution. We believe that we but voice the opinion of the profession at large, when we say that such attempts at reform as the papers would indicate are about to be undertaken are at this time misjudged, and in no way meet with the approval of the great mass of truly philanthropic people.

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#### ANNUAL REPORT OF SUPERVISING SURGEON-GENERAL OF THE MARINE-HOSPITAL SERVICE.

THE report of Surgeon-General Wyman for the year 1895 is embodied in a volume of 477 pages containing considerable material of more than ordinary interest to medical readers.

The first portion of the report contains the usual details relative to the routine work of the Marine-Hospital Service, including a description of the marine hospitals continued from previous annual reports and illustrated with photographs of those at Cairo, Detroit, Evansville, Key West, Portland, Me., Port Townsend, St. Louis, Vineyard Haven and Wilmington.

About ninety pages of this portion of the report is devoted to necropsies made at the hospitals.

Fifteen papers are contributed by medical officers, treating of various medical and surgical subjects. Among these the following have special interest:

Dr. Bratton's paper on "An Arid Region Sanitarium for Tuberculous Patients" calls attention to lack of proper provision for the treatment of cases of pulmonary tuberculosis among seamen, and pronounces the present mode of treatment of consumptive patients of the Marine-Hospital Service a disastrous failure. The writer believes the climatic treatment is the only one which promises success, and points to the elevated, dry, mid-continental region between Santa Fé, on the north, and Tucson and El Paso, on the south, as the best location for a sanitarium for consumptives. He



calls attention to the fact that fishermen are much more exempt from consumption than merchant sailors, and gives as a reason the fact that fishermen live more in open boats and are not packed together in a fore-castle, like sardines, where a single consumptive can be a danger to many others.

Dr. Sprague presents a brief paper on "The Treatment of Deck Hands on River Steamboats," revealing a serious condition of affairs which needs legislation for the relief of this class of men, having special reference to their treatment, their accommodations and their food.

The statistical portion of the report shows that the number of sick and disabled seamen to whom relief was furnished in 1895, was 52,643. The number of such persons treated has varied but little during the past five years. The greatest number treated at any one hospital was 4,566, and this was at Brooklyn, N. Y., and the next highest number was 3,534, and was at Chelsea, Mass.

In the second portion of the report, entitled "Public Health Service," an illustrated description of national quarantine stations is presented. Photographs are given of the stations at Sandy Hook, Blackbeard Island, Ga., Dry Tortugas, Fla., Ship Island, Miss., San Francisco and Port Townsend.

Dr. Kinyoun's report upon the Hygienic Laboratory is chiefly devoted to the subject of serum-therapy in diphtheria, and is an important contribution to the subject. He calls attention to the importance of supervision over the preparation of antitoxin and to the liability of its being made by irresponsible parties. It was decided by the German Health Board that all antitoxin intended for use in that country should be examined at Berlin, with reference to its purity and strength. The same course was pursued by the State Board of Health of Massachusetts. Dr. Kinyoun concludes as follows, so far as antitoxin is concerned :

Antitoxin will never work miracles. It has its limit, like any other agent, and, like a perfect piece of machinery, will not accomplish the full result unless directed by a skilled hand. Some persons affected with this dread disease will succumb, it matters not how soon we apply the remedy. The majority will, however, I am sure, recover if the antitoxin is given early and properly. . . . It is to be hoped that every State and municipality will take the proper steps to provide facilities to supply the remedy to the people and by a judicious and timely use be able to stamp out this terrible scourge, which carries off so many thousands.

The report contains an account of the prevalence of cholera, small-pox and yellow fever. That portion which refers to small-pox details its prevalence in the United States only, while the accounts of cholera and yellow fever relate to other countries. In the section relating to yellow fever, emphasis is laid upon the imminent danger from the prevalence of the disease in Cuba, and especially at Havana. Much historical, statistical and other data about the disease are presented. The whole number of deaths from yellow fever in Cuba from 1853 to 1879 was 55,917. A complete chronological table is also given with the date of appearance of yellow fever in the United

States, from 1668 down to the present time, with the locality and origin of the disease.

The writer states that there is no improvement in sanitary conditions in Havana, the authorities showing no disposition to remedy the evils which exist.

## MEDICAL NOTES.

THE "HEMORRHAGIC CANDIDATE."—The "hemorrhagic candidate" is what the *Tribune* calls Mr. Bryan, anent his statement that his heart bled for the poor and down-trodden.

THE BUFFALO ACADEMY OF MEDICINE.—At the last regular meeting of the Section in Surgery, on Tuesday evening, the 6th inst., the following papers were read: "The Semi-Centennial of Anesthesia," by Dr. Roswell Park; and "Ancestry as a Factor in Surgical Diseases," by Dr. Woods Hutchinson. Dr. R. R. Ross gave an exhibition of the Röntgen-ray apparatus, with demonstrations.

THE ASSOCIATION OF GERMAN PHYSICIANS AND SCIENTISTS held its Sixty-eighth Annual Meeting at Frankfort-on-Main, during the week ending September 28th. Among the general addresses delivered were essays by Dr. Buchner, of Munich, on "Biology and the Science of Health"; Dr. Below, of Berlin, on "The Practical Aims of Military Hygiene," and Dr. Weigert, of Frankfort-on-Main, on "New Questions in Pathological Anatomy." A discussion on "The Results of Recent Investigations on the Brain" was participated in by Flechsig, of Leipzig; Edinger, of Frankfort, and von Bergmann, of Berlin.

## BOSTON AND NEW ENGLAND.

THE SEMI-CENTENNIAL OF ANESTHESIA.—Among those present as invited guests at the Semi-Centennial of Anesthesia were Mrs. W. T. G. Morton, the widow of the discoverer, her son, Dr. W. J. Morton, of New York; her daughter, Mrs. Frederick Young, of New-ark, N. J., and her grandson, Sidney Otis, who is now in the sophomore class at Harvard.

HARVARD MEDICAL SCHOOL, EVENING LECTURES.—The following lectures will be given at the Harvard Medical School at 8 P. M. on the dates indicated. The profession are invited.

PROF. F. C. SHATTUCK. "The Prognostic and Diagnostic Value of Blood Examination as Practised To-day." October 29th.

DR. G. W. GAY. "When to Call a Surgeon in Appendicitis." November 5th.

DR. CHARLES HARRINGTON. "New and Old Methods of Preserving Foods and their Influence on Public Health." November 12th.

ASST. PROF. FRANK B. MALLOY. "Facts and Theories in Regard to Staining." November 19th.

PROF. C. J. BLAKE. "On Hearing-tests and the Importance of Testing the Hearing of School Children." December 3d.

PROF. CHARLES S. MINOT. "The New Theories of Protoplasm." December 10th, 17th.

ASST. PROF. FRANK H. DAVENPORT. "Displacements of the Uterus." January 7th, 14th.

DR. ABNER POST. "Late Hereditary Syphilis." January 21st.

PROF. J. J. PUTNAM. "The Newer Views of the Nature, Causes and Treatment of Epilepsy." January 28th, February 4th.

PROF. T. DWIGHT. "The Reconstruction Method in Human Anatomy. Illustrated by the Reconstruction of Several Viscera." February 11th.

ASST. PROF. WM. T. PORTER. "The Physiology of the Sympathetic Nervous System." February 18th.

PROF. WM. T. COUNCILMAN. "Arterio-Sclerosis." February 25th, March 4th.

DR. F. E. CHENEY. "Injuries of the Eye." March 11th.

ASST. PROF. E. H. BRADFORD. "Disease of the Hip-Joint." March 18th.

PROF. J. C. WARREN. "Certain Forms of Acute Intestinal Obstruction." March 25th, April 1st.

**BEQUEST TO A HOSPITAL.**—By the will of the late Sarah Yeaton, of Portsmouth, N. H., the Cottage Hospital at Portsmouth will receive \$200.

**THE TWENTY-FIFTH ANNIVERSARY OF ST. LUKE'S HOME.**—Sunday, October 18th, was the twenty-fifth anniversary of the founding of St. Luke's Home for Convalescents at Roxbury, Mass. Since it was opened between four and five thousand convalescents have been patients in the home, a large proportion of whom have left with health completely restored. There is now a permanent fund of about \$50,000.

**DR. SULLIVAN AND THE BOARD OF HEALTH OF MALDEN.**—The charge against Dr. John Langdon Sullivan of Malden, Mass., of having failed to report a case of contagious disease was dismissed by the Judge of the District Court of Malden as based on insufficient evidence. It is reported that the judge intimated that the case came dangerously near being one of malicious prosecution.

**THE VERMONT STATE MEDICAL SOCIETY.**—The annual meeting of this Society was held this year at St. Johnsbury, Vt., closing October 16th. St. Albans was chosen as the place of meeting for next year. Seventy-three new members joined the Society during the meeting, and the following officers were elected: President, F. R. Stoddard, Shelburne; Vice-President, W. D. Warren, Cabot; Secretary, D. C. Hawley, Burlington; Treasurer, D. C. Kemp, Montpelier; License Censors, Drs. Tinkham, Twitchell and H. H. Lee; Anniversary Chairman, Dr. W. S. Noy.

#### NEW YORK.

**THE POWERS OF THE STATE BOARD OF HEALTH.**—At a meeting of the Society of Medical Jurisprudence held October 12th, Dr. Daniel Lewis, one of the Commissioners of the State Board of Health, read a paper on "Enemies of Sanitary Science," in the course of which he contended that the powers at present vested in the State Health Board were not as great as they should be and that the annual appropriation of \$200,000 now allowed for its maintenance and work, was far too small.

**A LOW MORTALITY-RATE.**—The reports of the Bureau of Vital Statistics show that the mortality of the city is now about at its lowest mark for the year. During the week ending October 17th there were reported only 636 deaths, which is a decrease of 21 from the week previous and represents an annual death-rate very considerably below the average for the year, namely, 22 per thousand of the estimated population. Compared with the records of the week ending Octo-

ber 11th, the deaths from measles decreased from six to two and those from scarlet fever, from four to one. The deaths from diphtheria and whooping-cough were exactly the same, namely, 17 and 7 respectively. The deaths from typhoid fever increased from 5 to 15 and those from consumption, from 72 to 87, while the mortality from pneumonia decreased from 74 to 68.

### Miscellany.

#### THE SEMI-CENTENNIAL OF ANESTHESIA.

IN his Address of Welcome to those present at the celebration of the Semi-Centennial of Anesthesia, President Charles H. Dalton of the Board of Trustees, spoke in part as follows:

"It is my privilege on behalf of the Corporation of the Massachusetts General Hospital to welcome you here to-day as guests of this venerable institution. Though somewhat less than a century old, the hospital is one of the earliest in the country. It has long passed its infancy and youth and has reached a period in its life already rich in history and traditions. In 1810 two distinguished members of the profession, being impressed with the importance of founding a general hospital in this growing city and neighborhood, for the better care of the sick and wounded, for the larger opportunities for the study of the art of healing and scientific investigation of the causes of disease, addressed a letter to their fellow-citizens asking their co-operation for this purpose. In the following year the Commonwealth gave a charter and a generous grant, known as the Province House estate, and the merchants and other citizens responded with equal liberality to the appeal of Drs. James Jackson and John Collins Warren, which resulted in the building of the central part of the hospital, a structure which, both in respect to its architectural dignity and its honest workmanship, as well as its fitness for its purpose, is a fair monument to the characters of its projectors.

"Since then, for three generations, the institution has never failed to have at its service the highest professional skill in all its constantly growing departments and scientific development, and the sympathy and confidence of the public. During these eight-four years there has been an annually increasing procession of patients seeking its protecting shelter, who have been tenderly cared for, whether on free beds or otherwise, and in this most important function the hospital has amply realized the purposes of its enlightened and humane founders. I do not refer to this record as being in any degree peculiar to this hospital. It is simply the story of the performance of its duty to the public, and for which it was chartered by the Commonwealth. There is one page in its history which of itself alone would be more than a recompense for the loss of all the rest, inasmuch as of what was inscribed thereon the whole world has been beneficiary, and, incidentally, has raised the name of the Massachusetts General Hospital to an honorable distinction at home and abroad.

"Fifty years ago to-day in the operating theatre, then under yonder dome, sulphuric ether was first used for the prevention of pain to a patient undergoing a capital operation. This application was made by Dr. W. T. G. Morton. The experiment was a success.

"I have to express to you the cordial welcome of the corporation to this celebration of the fiftieth anniversary of the first surgical operation under which the patient suffered no pain, no discomfort, no anxiety. The occasion is unique."

At the close of the Semi-Centennial exercises, Lord Playfair, who was present, was asked to speak.

Lord Playfair expressed special interest in the celebration now in progress, partly due to the fact that he

himself in the course of his life's work had made numerous experiments relating to means and methods of anesthesia.

On every occasion of this sort the name of Sir James Simpson must be mentioned with gratitude. The disinterested enthusiasm with which Dr. Simpson worked regardless even of actual danger to himself, was most praiseworthy.

Lord Playfair told an amusing story of an experiment which he was about to conduct with Sir James Simpson in the direction of a supposed new anesthetic method. Sir James came to him one day and told him that he was disgusted with chloroform, and would thank him very much for the discovery of a satisfactory substitute. Lord Playfair a few days later announced to him that he had made the required discovery. The material that he intended to use was bi-bromide of ethylene. Sir James Simpson smelt the compound, and forthwith said that it was the very thing wanted. He was very anxious to repair immediately to Lord Playfair's private room and experiment upon himself.

Lord Playfair was unwilling that the experiment should take place before further trial, and finally induced Sir James to have the anesthetic tried on some rabbits first. The rabbits were accordingly treated, and were put away to await developments.

On the next day Dr. Simpson appeared at Lord Playfair's laboratory, propped himself up with two chairs and asked Lord Playfair for the solution. Lady Simpson, who was present, advised her husband to see how the rabbits had fared under the treatment before he applied it to himself.

"When the attendant came in," continued Lord Playfair, "we saw him holding by the ears two rabbits—perfectly dead!"

The story is certainly a striking instance of the value of animal experimentation.

Although an Englishman, Lord Playfair felt that the credit for the discovery of anesthesia belonged to the United States and to Dr. Morton, who first made the world realize its value.

#### WHO WAS THE HERO OF THE ETHER CELEBRATION?

"WHY should not the man who first took ether have a monument? With all due regard for the doctors, he was the hero of the occasion." Thus speaks a daily contemporary with a positive assurance which is often the twin brother of half-knowledge. Who was the man who first "took" ether. We doubt if even our contemporary knows, and are sure no one else does.

Gilbert Abbott, the patient operated on at the Massachusetts Hospital, October 16, 1846, by Dr. Warren, is probably the person referred to in the above paragraph. Many people had previously "taken" ether; Dr. Morton had previously rendered himself unconscious for from six to eight minutes by inhaling ether administered by himself—a much greater risk than Abbott ran; Morton had extracted teeth many times, the patient under the influence of ether; Long had amputated fingers; Abbott, of all those concerned, at least enjoyed an immediate and positive reward. Perhaps he deserves a monument also. But he cannot be regarded as the hero of the occasion. Possibly the, rabbits, mentioned by Lord Playfair, who saved Dr. Simpson's life by being sub-

mitted to the influence of bi-bromide of ethylene—but the rabbits died.

We fear our contemporary (the *Transcript*) misses the point of the celebration.

#### THE JUBILEE OF ANESTHESIA.

##### OPINIONS OF THE PROFESSION.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH,  
5th October, 1896.

DR. J. COLLINS WARREN. *My dear Sir:*—I beg to thank you and the hospital staff for the honor of the invitation to the commemoration of the fiftieth anniversary of that great discovery, surgical operation without pain. Distance alone prevents my being among you on the occasion. I had the pleasure of visiting Boston twelve years ago, and I hardly think it would be quite prudent at my age (now three years over the proverbial threescore and ten) to venture again across the great Atlantic. Among the pleasures I had in visiting America, as compared with the countries of Europe, was that of realizing that we are the same people. I admired Boston as, among American cities, reminding me most of home; and I can recall the beautiful view of the Charles River from the window of dear old Oliver Wendell Holmes, one of those who have made Boston famous in literature and science.

This commemoration brings up memories to me of the days of pre-anesthetic surgery in our old Royal Infirmary here; the operating-theatre ringing with the groans and shrieks of the patient, the distressed faces of the crowd of students, and the haste of the operator to be done. I well remember, when the news came across the Atlantic, the first use of ether in that great theatre by my old masters, Syme and Miller. The change was wonderful; no longer pain, the patient lying nearly as quiet as the sleeper, and the operator undisturbed and risking nothing by haste.

It is well that this commemoration should be held, not merely that such a great event deserves celebration, but in order to remind the young generation that has since grown up that these benefits which they (patients and surgeons alike) now enjoy were not always. I may add that the celebration is more particularly required among us here. Ether, or a mixture of ether and chloroform, seems to be the anesthetic most commonly employed in England; but here, and in Scotland generally, it is so almost invariably chloroform that the word chloroform has come to be identified in the public mind with painless operation, as if chloroform had been the discovery. I do not mention this as in diminution of the merit of Sir James Simpson, one of my old teachers, in the subsequent discovery of the anesthetic property of chloroform; but *magna est veritas*, and it is well to keep our public in mind that we owe the great discovery to our American brethren.

In return, we have sent you the no less great boon of antiseptic surgery. We were, but last month, at the meeting of the British Association at Liverpool, paying renewed honor to Sir Joseph Lister, my former colleague on the surgical staff of the old Royal Infirmary here, as the man to whom we and the world owe this great boon in surgery. It is quite wonderful for me to see, when I visit our new Royal Infirmary, what can now be done under antiseptic treatment—things we would not have ventured on in the old days. And now we are having the Röntgen rays, letting us actually see the bones in the living body. It has, indeed, been a half-century of wonderful progress.

But I must bring this too long letter to a close. I beg to congratulate the Massachusetts General Hospital on having been the scene of the first public demonstration of the great discovery; and, if I am right in my impression that it was by your hands, I no less congratulate you on having lived to see half a century of the fruition of your example.

I have the honor to be, Yours very sincerely,

JOHN STREUTERS,

President of the College.

SIR RICHARD QUAIN sincerely regrets that distance renders it impracticable for him to attend the fiftieth anniversary of the public demonstration of surgical anesthesia at the Massachusetts General Hospital on October 16, 1896. He heartily congratulates the institution whence has emanated one of the greatest blessings ever conferred upon mankind.

He sends a copy of an address which he once gave the students of University College, London, in which a brief statement is made as to the introduction of anesthesia into Europe.

"Robert Liston was one of the greatest of modern surgeons. I would, however, desire especially to emphasize the fact that it was Mr. Liston who in our hospital performed the first operation under anesthetics in this country. The facts, of which I was a witness, will be found fully recorded in the first volume of the *Lancet* for 1847. The story briefly told is this: that Mr. Morton, a dentist in Boston in the United States, used sulphuric ether to produce insensibility to pain during the removal of teeth. Subsequently some capital operations were performed in the Massachusetts Hospital without pain. This success was communicated through Dr. Boott, a retired American physician who resided in Gower Street, and who was a zealous member of the Council of our College, to Mr. Liston, who, influenced by the statement, saw Mr. Robinson, a dentist in Gower Street, remove a tooth as Mr. Morton had done on several occasions in Boston, and the result is told in the following note from Mr. Liston:

Clifford Street, December 21, 1846.

MY DEAR SIR:—I have tried Ether inhalation to-day in a case of amputation of the thigh, and in another requiring evulsion of both sides of the great toe-nail, with the most perfect and satisfactory results. It is a very great matter to be thus able to destroy sensibility to such an extent and without apparently any bad result. It is a fine thing for operating surgeons, and I thank you most sincerely for the early information you were so good as to give me of it.

Yours faithfully, ROBERT LISTON.

"Thus anesthesia, that great boon to mankind, was introduced in this country at University College Hospital by one of its surgeons. The nature of the anesthetic, of which there are now, as you know, several, was really a subject of secondary importance. The 'oil of wine' and also 'chloric ether' had been tried in America."

#### CONGRATULATIONS BY CABLE.

THE following cablegrams were read by the Chairman, Dr. J. C. Warren, at the opening of the exercises celebrating the semi-centennial of anesthesia on October 16th:

CHRISTIANIA, October 16, 1896.

TRUSTEES AND STAFF MASSACHUSETTS GENERAL HOSPITAL, BOSTON:—Best congratulations on fiftieth anniversary.

CÆSAR BECK.

MOSCOW, October 16, 1896.

BOSTON, MASSACHUSETTS GENERAL HOSPITAL. COLLINS WARREN:—The Moscow Surgical Society at a special meeting held in honor of the fiftieth anniversary of the introduction of anesthetics celebrates the memory of Morton and Simpson the great benefactors of mankind. It greets the committee and wishes it every success in its labors on behalf of science, which knows no geographical boundary.

DIAXON, *President*.

WARNECK, *Secretary*.

#### THE PLAGUE OF ST. KILDA.<sup>1</sup>

FOR upwards of a century at least the newly-born infants in the lonely island of St. Kilda have been decimated—nay, more than decimated—by a mysterious malady, popularly described as the "eight-day sickness." As recently as 1865 it was reported that

<sup>1</sup> Medical Press and Circular.

of 125 children, the offspring of the fourteen married couples residing on the island in 1860, no less than 84 died within the first fourteen days of life, a mortality equivalent to 67.2 per cent. The prevalence of the disease has been variously ascribed to sudden variations of temperature, defective ventilation, lack of warmth, mismanagement of the umbilical cord, dietetic peculiarities and intermarriage.

Attempts have been made at various times to discover the morbid agent and to circumscribe its ravages, but with such ill-success that the natives came to regard the disease as a special dispensation of Providence not to be fought against under pain of heresy. Attention having been publicly called to this lamentable sacrifice of human life, a fresh attempt was made in 1892 under the guidance of Dr. G. A. Turner, of Glasgow, who, on the assumption of its being a germ disease gaining access through the umbilical cicatrix, suggested an iodoform dressing applied on well-defined scientific principles. In spite of the apathetic resistance of the mothers this treatment soon put a term to the "massacre of the innocents," and in 1894 he had the satisfaction of learning that not a single infant had succumbed since the treatment was begun.

This result is the direct outcome of the recognition by bacteriologists of the microbial origin of all forms of tetanus, tetanus neonatorum among the number. The immunity thus acquired is the more significant seeing that during the period 1883-93 the deaths under the head of "idiopathic tetanus" numbered 103 in Scotland, and 147 in England, a total of 250 lives sacrificed to an eminently preventable disease.

#### THE DISTRIBUTION OF GAMBETTA.

UNDER the heading "Fragments of Historic Humanity," the *Practitioner* gives the following rather amusing account of the fate of Gambetta's mortal remains. It would seem probable that at the summons of the last trump he will find more than ordinary difficulty in collecting himself. In the words of the *Practitioner*:

Nothing is sacred to the relic-hunter or to the anthropologist. Shakespeare cursed him that should move his bones, but it is probable that both scientific investigators in search of measurements and journalists in search of "copy" would cheerfully take the risk of the poet's malediction for a brief opportunity of inspecting his skull. His bones, however, have not yet been disturbed. In this the author of "Hamlet" has been more fortunate than some other great men, fragments of whose anatomy are scattered about among collectors of such curiosities in a manner recalling the complaint of poor Mary's ghost in Hood's pathetic ballad:

"I vow'd that you should have my hand,  
But fate gives us denial;  
You'll find it there, at Dr. Bell's,  
In spirits and a phial.

"I can't tell where my head is gone,  
But Dr. Carpus can;  
As for my trunk, its all pack'd up  
To go by Pickford's van."

Something of the same kind appears to have happened in the case of Gambetta, whose *disjecta membra* were distributed among half-a-dozen enthusiasts. The post-mortem examination of the deceased statesman's body was made on January 2, 1883, by Professor Cornil, in the presence of MM. Paul Bert, Brouardel, Charcot, Trélat, Verneuil,

Lannelongue, Siredey, Mathias Duval, and three or four other medical practitioners. M. Lannelongue secured the right arm, the wound of which was the primary cause of death; Professor Cornil himself kept the viscera; M. Mathias Duval, as President of the Société d'Anthropologie, appropriated the brain, which weighed 1,160 grammes (rather more than two and one-half pounds). The heart was taken possession of by Paul Bert, who kept the relic with the intention of placing it in a monument which was to be raised to the memory of his departed friend. After Bert's death it was reported that the heart had been lost in the bustle of his voyage to Tonquin, but it appears to have been left behind in safe keeping in Paris, and it is believed to be still in the hands of Paul Bert's representatives.

## Correspondence.

### THE FIRST USE OF ETHER IN MIDWIFERY.

BROOKLINE, MASS., October 17, 1896.

MR. EDITOR:—In the JOURNAL for October 15th, you have an interesting editorial on "The Celebration of the Semi-Centennial of Anesthesia." In one paragraph you "refer the curious of this generation to the authorities of a previous one," and in a foot-note give a list of some of them. May I take the liberty of directing your attention to still another authority spoken of by Dr. Reynolds at the beginning of his address? I refer to Dr. Walter Channing, who, in 1848, published a book called "A Treatise on Etherization in Childbirth, illustrated by Five Hundred and Eighty-one Cases."

Dr. Channing states in this book that Dr. N. C. Keep was the first physician to use ether in a case of midwifery in America, and he himself was the first one to employ it in an instrumental case of labor. The date of the first was April 7, 1847, and of the second, May 5, 1847. Dr. Keep's case was published in the JOURNAL for April 14, 1847.

The prompt recognition of the value of anesthesia in midwifery in Boston and its extended use by Dr. Channing, the Professor of Obstetrics in Harvard University, as demonstrated by the large number of cases reported, is, it appears to me, a fact worthy of record.

Yours truly,

W. C.

[Our correspondent is entirely justified in his feeling that the prompt recognition in Boston of the value of anesthesia in midwifery should not be allowed to escape the recognition of this generation. Dr. Keep's and Dr. Channing's cases antedated Dr. Simpson's adoption of chloroform in labor by many months. We were aware of the facts referred to by our correspondent, and articles in regard to them will be found in the volumes of this JOURNAL to which we referred.—ED.]

### A PLEA FOR GILBERT ABBOTT.

BOSTON, October 19, 1896.

MR. EDITOR:—Amid all our rejoicing on Friday and Saturday, and amid all our expressions of gratitude and admiration for Morton the inventor, and Warren the surgeon, nothing was said about Gilbert Abbott, the patient. This omission was one noticed by the laity, although not thought of by us. Of course, the great fact was the introduction of anesthesia, but the name of Gilbert Abbott, single, printer, of Boston, who showed so much pluck in being willing to inhale the ether ought properly to be mentioned at this time. The tumor was what would be commonly called a "birthmark" and discolored the whole of one side of his neck in front. What his subsequent history has been I know not; but perhaps some of the descendants of Dr. Morton and Dr. Warren may have looked him up.

Very truly yours,

JOHN HOMANS, M.D.

## METEOROLOGICAL RECORD

For the week ending October 10th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. s		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.		8.00 P. M.
S...4	30.23	52	55	49	82	88	85	N.	N.E.	6	8	O.	O.	.14
M...5	30.16	50	52	47	82	94	88	N.E.	N.	16	11	H.	H.	.12
T...6	30.09	48	51	45	83	75	84	N.	N.	16	6	H.	H.	.15
W...7	29.92	49	54	44	76	83	80	N.	S.W.	2	6	O.	O.	.01
Th...8	30.14	48	55	41	64	64	64	W.	W.	16	12	C.	C.	
F...9	30.46	46	54	39	58	49	52	N.W.	N.	15	6	F.	F.	
S...10	30.58	43	49	37	64	62	63	N.	N.E.	9	12	C.	C.	
P														

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 10, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	657	264	13.20	10.80	6.00	.75	3.15	
Chicago	1,678,967	—	—	—	—	—	—	—	
Philadelphia	1,164,000	357	104	11.20	2.80	2.80	1.40	6.44	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	491,205	192	67	14.56	15.02	3.64	2.60	6.24	
Baltimore	496,815	168	54	20.40	10.20	10.80	5.40	2.40	
Cincinnati	326,000	—	—	—	—	—	—	—	
Cleveland	314,637	83	40	19.20	4.80	1.20	2.40	14.40	
Washington	275,500	110	28	14.56	10.92	2.73	8.19	2.73	
Pittsburg	236,617	—	—	—	—	—	—	—	
Milwaukee	276,000	—	—	—	—	—	—	—	
Nashville	87,764	23	8	17.40	21.75	—	8.70	8.70	
Charleston	66,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	38,687	16	7	12.50	6.25	6.25	6.25	—	
Fall River	88,000	—	—	—	—	—	—	—	
Lowell	84,359	31	7	16.15	16.15	—	8.23	12.92	
Cambridge	81,519	22	10	20.75	—	12.45	8.30	—	
Lynn	62,456	—	—	—	—	—	—	—	
New Bedford	55,254	18	8	22.22	5.55	16.66	5.55	—	
Springfield	51,534	17	4	17.64	5.88	17.64	—	—	
Lawrence	52,158	14	8	28.56	21.42	14.28	—	14.28	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	15	8	20.00	6.66	—	—	20.00	
Brookton	33,167	—	—	—	—	—	—	—	
Haverhill	30,185	7	2	14.28	14.28	—	14.28	—	
Malden	29,709	8	1	12.50	25.00	—	12.50	—	
Chelsea	31,286	6	1	—	—	—	—	—	
Fitchburg	26,394	9	4	22.22	11.11	—	—	22.22	
Newton	27,622	7	3	14.28	—	14.28	—	—	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	13	2	15.38	15.38	—	7.69	7.69	
Waltham	20,877	7	5	—	14.28	—	—	—	
Quincy	20,712	—	—	—	—	—	—	—	
Pittsfield	20,447	—	—	—	—	—	—	—	
Everett	18,578	—	—	—	—	—	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,554	—	—	—	—	—	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 1,821: under five years of age 549; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 271, consumption 208, acute lung diseases 160, diarrheal diseases 101, diphtheria and croup 92, typhoid fever 45, whooping-cough 13, measles 6, scarlet fever and cerebro-spinal meningitis 5 each, erysipelas 4.

From whooping-cough New York 7, Philadelphia and Baltimore 2 each, Boston and Melrose 1 each. From measles New York 6. From scarlet fever New York 4, Baltimore 1. From cerebro-spinal meningitis New York 3, Boston and Washington 1 each. From erysipelas New York 2, Boston and Cleveland 1 each.

In the thirty-three greater towns of England and Wales, with

an estimated population of 10,846,971, for the week ending October 3d, the death-rate was 15.7. Deaths reported, 3,272: diarrhea 114, diphtheria 99, scarlet fever 53, measles 45, fever 43, whooping-cough 31.

The death-rates ranged from 10.0 in Brighton to 20.8 in Bolton: Birmingham 16.5, Bradford 16.6, Burnley 14.7, Croydon 11.5, Gateshead 20.7, Leeds 17.4, Leicester 10.0, Liverpool 19.2, London 15.0, Manchester 17.2, Newcastle-on-Tyne 17.4, Portsmouth 11.7, Sheffield 18.6, Swansea 14.3.

#### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 10, 1896, TO OCTOBER 16, 1896.

**CAPTAIN BENJAMIN MUNDAY**, assistant surgeon, will, in addition to his present duties at Fort Wayne, Mich., examine recruits enlisted at Detroit, Mich., and will furnish medical attendance at the recruiting station in that city.

**CAPTAIN WILLIAM P. KENDALL**, assistant surgeon, U. S. Army, is relieved from duty at Fort Sam Houston, Tex., and ordered to Fort Brown, Tex., for duty at that post, to relieve **MAJOR PETER J. A. CLEARY**, surgeon, U. S. Army.

**MAJOR PETER J. A. CLEARY**, surgeon, upon being relieved from duty at Fort Brown, Tex., by **CAPTAIN KENDALL**, assistant surgeon, will report in person to the commanding general, Department of Texas, for duty as chief surgeon of that department.

**CAPTAIN N. S. JARVIS**, assistant surgeon, U. S. Army, granted six months leave of absence with permission to go beyond sea.

**CAPTAIN JEFFERSON D. POINDEXTER**, assistant surgeon, will be relieved from duty at Fort Riley, Kan., and will report in person to the commanding officer, Willets Point, N. Y., for duty at that post.

**MAJOR HENRY McELDERY**, surgeon, is relieved from duty at Fort Robinson, Neb., at expiration of his present leave of absence, and is ordered to Fort Leavenworth, Kan., for duty at that station, to relieve **MAJOR CALVIN DEWITT**, surgeon, U. S. Army.

**MAJOR CALVIN DEWITT**, surgeon, upon being relieved from duty at Fort Leavenworth, Kan., is ordered to Fort Monroe, Va., for duty at that station, to relieve **MAJOR EDWARD B. MOSLEY**, surgeon, U. S. Army.

By direction of the Secretary of War, **COLONEL CHARLES H. ALDEN**, assistant surgeon-general, and **MAJOR CALVIN DEWITT**, surgeon, are detailed as delegates to represent the Medical Department of the Army at the second Pan-American Medical Congress, to be held in the City of Mexico, November 16 to 19, 1896.

**FIRST-LIEUT. GEORGE D. DESHON**, assistant surgeon, is granted leave of absence for four months, to take effect after he shall have reported for duty at Washington Barracks, D. C.

By direction of the Secretary of War, **CAPTAIN WILLIAM B. DAVIS**, assistant surgeon, now Major and surgeon, will be relieved from duty as attending surgeon and examiner of recruits in New York City, upon the expiration of the present leave of absence granted him in S. O. 130, A. G. O., September 30, 1896, instead of the conclusion of his examination for promotion as heretofore ordered by paragraph 2, S. O. 214, A. G. O., September 30, 1896.

**COLONEL FRANCIS L. TOWN**, assistant surgeon-general, is at his own request, having served over thirty years, retired from active service this date, October 10, 1896.

#### PROMOTIONS.

**LIEUT.-COL. C. R. GREENLEAF**, deputy surgeon-general, to be assistant surgeon-general, with rank of Colonel, October 10, 1896, *vice* TOWN, retired.

**MAJOR WM. H. GARDNER**, surgeon, to be deputy surgeon-general with rank of Lieutenant-Colonel, *vice* GREENLEAF, promoted, to date, October 10, 1896.

**CAPTAIN WM. W. GRAY**, assistant surgeon, to be surgeon with rank of Major, October 10, 1896, *vice* GARDNER.

#### ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga and amounting to about one hundred and eighty dollars, will be made on July 14, 1897, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1897.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope

having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1896 was not awarded.

THOMAS R. NEILSON, Secretary.

#### SOCIETY NOTICES.

**NORFOLK DISTRICT MEDICAL SOCIETY.**—A stated meeting will be held at Amory Hall, 67 Warren Street, Roxbury, Tuesday, October 27th, at 3 p. m.

Order of Business: (1) Reading of Records. (2) Report of Committees. (3) Election of Nominating Committee. (4) Incidental Business. (5) Communication: "Lactation," E. G. Morse, M.D.

The next examination of candidates will take place at 2 p. m., November 12th.

Members of the Society are requested to inform the Secretary of any recent changes of address, or any error in address they may discover in the direction of the monthly notifications.

J. C. D. PIGEON, M.D., Secretary.

**SUFFOLK DISTRICT MEDICAL SOCIETY.**—The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, October 23, 1896, at 8 p. m.

Paper: Dr. F. W. Johnson, "Deductions from Hospital Work in Abdominal Surgery."

Election of chairman for the ensuing year.

GEO. H. WASHBURN, M.D., Chairman.

C. H. HARE, M.D., Secretary.

#### BOOKS AND PAMPHLETS RECEIVED.

**Modern Greek Mastery, a Short Road to Ancient Greek.** By Thomas L. Stedman, A.M., M.D. New York: Harper Brothers. 1896.

**Report of the Commissioners of Education for the year 1893-94.** Volume II, containing Parts II and III. Washington: Government Printing Office. 1896.

**De la Luxation Congénitale du Fémur.** Par le Dr. Edouard DeLanglade, Ancien Interne des Hôpitaux de Paris, Préparateur à la Faculté de Médecine. Paris: G. Steinheil, Editeur. 1896.

**Transactions of the Medical Society of the State of Pennsylvania at its Forty-sixth Annual Session held at Harrisburg, 1896.** Volume xxvii. Philadelphia: Published by the Society, 1896.

**Discussion on Sporadic Cretinism, at the Annual Meeting of the British Medical Association in Carlisle, July, 1896.** Remarks by G. E. Shuttleworth, M.D., formerly Medical Superintendent Royal Albert Asylum, Lancaster. Reprint. 1896.

**Practical Notes on Urinary Analysis.** By William B. Canfield, A.M., M.D., Lecturer on Clinical Medicine, University of Maryland; Visiting Physician to the Union Protestant Infirmary, Bay View Hospital and Hospital for Consumptives of Maryland, etc. Second revised edition. Detroit: George S. Davis. 1896.

**Ptomaines, Leucomaines, Toxins and Antitoxins; or the Chemical Factors in the Causation of Disease.** By Victor C. Vaughan, Ph.D., M.D., Professor of Hygiene and Physiological Chemistry, and Frederick G. Novy, M.D., Junior Professor of Hygiene and Physiological Chemistry in the University of Michigan. New (third) edition. In one 12mo volume of 603 pages. Philadelphia: Lea Brothers & Co. 1896.

**A Text-Book of Special Pathological Anatomy.** By Ernst Zeigler, Professor of Pathology in the University of Freiburg. Translated and edited from the eighth German edition by Donald McAlister, M.A., M.D., Linacre Lecturer of Physic and Tutor of St. John's College, Cambridge, and Henry W. Cottrell, M.A., M.D., Demonstrator of Morbid Anatomy in the University of Pennsylvania. Sections I-VIII. New York: The Macmillan Co. 1896.

**A Text-Book of the Diseases of the Nose and Throat.** By Francke Huntington Bosworth, A.B. Cantab., A.M., M.D., Professor of Diseases of Throat in Bellevue Hospital Medical College, New York; Consulting Laryngologist to the Presbyterian and St. Vincent's Hospitals, New York; Honorary Fellow of the British Otological, Laryngological and Rhinological Association, etc. Illustrated with 186 engravings. New York: William Wood & Co. 1896.

**A Text-Book for Training Schools for Nurses, including Physiology and Hygiene and the Principles and Practice of Nursing.** By P. M. Wise, M.D., Medical Superintendent, St. Lawrence State Hospital; Editor of the State Hospitals Bulletin; Professor of Psychiatry, University of Vermont; Member of the American Medico-Psychological Association, etc., with an introduction by Dr. Edward Cowles, Physician-in-Chief and Superintendent of the McLean Hospital, Boston, Mass. In two volumes. Volume II. New York: G. P. Putnam's Sons. 1896.



## Original Articles.

A RECORD OF THE TECHNIQUE OF OPERATION FOR APPENDICITIS FROM THE STAND-POINT OF PERSONAL EXPERIENCE.<sup>1</sup>

BY J. COLLINS WARREN, M.D., LL.D.

IN responding to the call of the chairman for a paper before this Section it occurred to me that the moment had arrived when the methods employed in operations for removal of the appendix by different surgeons could, with advantage, be compared. I have, therefore, selected the cases which came into my hospital service during the past winter as a group which might serve as a basis for critical analysis.

There were fifteen cases in all, about one-third of them presenting as difficult problems to solve as occurs to the operator. Among these were two fatal cases. Although the question of diagnosis does not come into this evening's discussion, it may be worth while to state that in none of this series was there any question as to the nature of the disease or as to the time when to operate. Experience seems to have brought with it facility of diagnosis, particularly to the surgeon who has been obliged so often to bring pathological conditions face to face with his previously expressed opinions.

The following cases may be separated more or less accurately into several distinct groups.

Class A comprises Cases I, III, XI and XII, in which there was extensive suppuration.

In Case I it will be seen that the patient was not sent to the hospital until a fortnight after the appearance of the first symptoms. The adhesions surrounding the opening into the abscess cavity were so firm that it was deemed unwise to break them up, and an opening the size of the index finger was the only outlet to a pus cavity which could be felt per rectum. No attempt was made to find the appendix. Convalescence was slow, and after one unsuccessful attempt to reopen the sinus and find the appendix, the appendix was eventually removed six months after the first operation. Each attempt was followed by a fecal fistula, owing to the wounding of the bowel in cutting and tearing tough adhesions. In the final operation by which the appendix was successfully removed, the incision was made parallel to the original incision and passed directly into the abdominal cavity. The sinus wall became then a valuable guide to the locality of the appendicular opening.

This seems to me an important point in the investigation of old sinuses, namely, that the sinus should remain untouched until its source has been reached by incision into the abdominal cavity.

Case III is also an example of extensive suppuration due to delay in operation. The appendix was not sought for, and a counter-opening was made in the right flank. Eventually there were four openings, with eight drainage-tubes. The patient made a slow recovery, and had the appendix removed six months later. The correspondence between the leucocytosis and the temperature was very marked in this case.

Case XII was one which had been operated upon in a previous service: owing to the extensive abscess cavity the appendix was not sought, and the patient

returned six months later with the history of a sinus which opened about once in six weeks. On opening the abdomen by a parallel incision, the appendix was found adherent, at its middle, to the cutaneous opening. On removal the appendix was found to be obliterated at its point of origin in the cecum. The secretion which accumulated in the greatly distended fundus forced its way periodically, by an overflow, through the thin cicatrix. This specimen illustrated well the mechanical conditions existing in most cases of "relapsing appendicitis." It is evident that the process is mechanical rather than septic.

This group shows well the tolerance of the abdominal cavity to extensive suppuration when sepsis is held within bounds. It teaches the lesson that we may take advantage of our effective methods of disinfection to deal more boldly with the wall of the abscess cavity. We need not fear to open the peritoneum under suitable precautions, that is, by careful walling off, in order to find and remove the appendix. Many abscesses can indeed be approached on their peritoneal side under these circumstances. All sinuses should be approached from this direction. I am not prepared yet to state definitely whether I should recommend this mode of dealing with large abscesses in all cases; but I think many can be so treated with advantage. The greatly increased control which the "walling off" method has given the surgeon over the abdominal cavity ought to enable him to secure the appendix in the great majority of that class of cases in which hitherto it has been allowed to remain.

Class B comprises two cases, both fatal. They were both operated on within forty-eight hours from the time of beginning of the attack.

In Case VI there was general peritonitis, but the pus was found principally in the right inguinal and lumbar regions. In this case the dry method of cleansing the abdominal cavity was attempted. Dry, sterile gauze was used freely in every direction.

In Case VIII the most thorough flushing of the peritoneal cavity was carried out, and tubes were introduced in all available directions. General sepsis came on later in this case than in the former, but the treatment did not seem to have been radical enough to have destroyed all sources of contamination. It is in such cases that employment of a streptococcus antitoxin may possibly prove a valuable post-operative treatment.

Class D is represented by Case IX. Here the operation had been performed before the suppurating stage; a provisional suture was taken in a small opening through which iodoform gauze had been introduced. This was tightened on the fourth day, and the wound healed by first intention. Such a result may be achieved even in cases in which suppuration is well established. After a thorough disinfection and free use of iodoform gauze which should be frequently renewed, the walls of the wound are often in condition to be approximated in a few days, and rapid healing thus obtained. The period of convalescence may in this way often be shortened several weeks.

In Case X the McBurney method of incision was employed successfully, although the appendix lay in a small pus cavity. The opening was easily enlarged downwards by dividing the linea semilunaris. This was subsequently sutured. The various layers were also united by provisional sutures. In this way the wound was eventually closed.

<sup>1</sup> Read before the Surgical Section of the Suffolk District Medical Society, May 6, 1896.



In the three cases of operation during the interval the McBurney incision was employed with the most satisfactory results. In none of these cases was an abdominal supporter advised.

In the *Virginia Semi-Monthly* of April 24th, Dr. Stuart McGuire has published a paper giving the views of prominent surgeons throughout the country on the prophylactic value of the abdominal belt after laparotomy. Opinions here given vary greatly. The author recommends it (1) in cases where the wound heals by granulation and the cicatrix is large and weak, and (2) when the patient is obese and the abdomen pendulous. It has been my custom to use it in all cases (with the exception above mentioned) for a year after the operation as it undoubtedly affords protection against stretching of the cicatricial tissue during unusual exertion or violent exercise. It serves as a sort of insurance against the indiscretion of patients.

#### ACUTE APPENDICITIS.

CASE I. M. J. C., aged about twenty years, was operated on October 3, 1895. This, his first attack, began about two weeks ago with violent pain in the abdomen, vomiting and fever. The symptoms varied in intensity at different times, and were treated principally by poultices and morphine. He was sent into the hospital by Dr. Conant, and at that time his temperature was 98.5°, pulse 108, respiration 24. The abdomen was distended, and a large cake could be made out. There was also a suspicious bulging into the rectum. The abdomen was opened by a three-inch incision over McBurney's point, and very firm adhesions found, principally in the pelvis. After walling off the general abdominal cavity, a small opening was made with the finger, and pus flowed freely from deep in the pelvis. A glass drainage-tube was inserted its full length. The resulting sinus healed slowly, fecal concretions being expelled frequently, probably from the end of the appendix. He was discharged with a small sinus on November 29th, after having had several chills and collections of pus at the bottom of the sinus. He returned in four days with a relapse due to indiscretion. An attempt was made to lay open the sinus, during which the colon was opened. From this time the sinus did well, and was healed by February 6, 1896. The cicatrix, however, bulged, but was held well by a belt. On Monday, April 17, 1896, the patient having returned to the hospital with a discharging sinus, I opened the abdomen parallel to and inside of the original incision, and traced the sinus to the edges of the pelvis, where it was found to lead from a small pocket containing a fecal concretion. The appendix was found also communicating with the same pocket by an opening in its end. The appendix was removed, and the greater part of the wound closed, an attempt being made to readjust the various layers of the abdominal wall which had become separated during the previous operation.

CASE II. M. D., aged forty-eight, entered the hospital October 16, 1895, with a history of severe cramps in the abdomen for thirty-six hours previous to entrance. The pain at first was diffuse, but became localized in the right iliac fossa. He was thought to have cancer by the physician who sent him in. At entrance his temperature was 102°, pulse 104, respiration 36. He had felt poorly for a week or more before coming in. At McBurney's point there was

great tenderness, and a cake was distinctly made out. Rectal examination was negative. On the next day the abdomen was opened by a three-inch incision, and the appendix found close under the thickened peritoneum of the abdominal wall. A mass of thickened omentum was tied and removed, and the wound drained by gauze wicks. The wicks were removed on the third day, and on November 14th he was discharged with a small superficial wound.

CASE III. F. W., thirty years old, entered the hospital on November 5, 1895, with the following history: From October 21st to 28th he had complained of malaise. On the 28th he began to have sharp pain in the epigastrium, which in the course of a week became localized in the right iliac fossa. At first the bowels were costive, but later were loose. On November 4th he had a very severe pain in the right iliac fossa, and his bowels moved eight times. The next day he vomited once, but has never had a chill. At the time of entrance his temperature was 101°, pulse 102, respiration 28. The abdomen was rigid, somewhat distended, and no tumor could be felt. There was leucocytosis of 21,700. Dr. Scudder operated, and found pus coming from the right flank chiefly; and here a counter opening was made, and a drainage-tube, and two wicks were put in. Pus was also found coming from the direction of the pelvis. The appendix was not sought for. On the 14th an incision was made in the epigastric region, but still the leucocytosis continued high — 24,400 on the 15th, and 47,700 on the 18th. On the latter date an incision was made just above the prevesical space. A mass still being felt by rectum, two drainage-tubes were on the 20th passed down into the pelvis. At this time the leucocytosis began to diminish, and on the 22d was only 10,000. On December 1st he had four wounds with two drainage-tubes in each; but these closed, and he was discharged with only a small sinus in the epigastric region.

On January 28th he reported with the wounds all healed, no sinus, and apparently perfectly well. On March 20th he reported that the wound had opened twice since leaving the hospital; and at that time he had two wicks in the sinuses, from which there was a slight amount of discharge, but which were tending to close. He came in later for a removal of the appendix; which was done by Dr. Cabot. The appendix being found reflected backward and high up in the abdominal cavity.

CASE IV. F. H. G., aged nineteen, entered November 7th. Five days ago he had pain in the epigastrium, becoming localized in the right iliac fossa within forty-eight hours. There was diarrhea for two days; and on the third day he took a dose of castor oil, which was followed by a movement. At no time was there any vomiting or chill. He entered with a temperature of 103°, pulse 96. The pain had much diminished under the administration of morphine, and he had no movement of the bowels for four days. There was a well-marked tumor in the right iliac region, and the incision at the operation was directly into an abscess cavity, from which flowed about three ounces of pus. He did well after the operation, was up on the 22d, and went to the Convalescent Home with only a shallow sinus.

CASE V. H. C., aged forty-seven, married, living in Stoneham, was seen by me in consultation with Dr. Nickerson on October 27, 1895. He had been per-

fectly well until two days before, and since then the chief symptom had been abdominal pain. He had had slight nausea without vomiting, no chill; his temperature was 103, pulse 112. A distinct cake was found at that time, and operation was advised but refused. He entered the hospital on November 8th, with a temperature of 99.8°, pulse 100, respiration 14. The abdomen was opened by a three-and-a-half-inch incision slightly above the usual point, and normal bowel presented. Resistance being felt in the direction of the median line, the general peritoneal cavity was walled off and the adhesions broken down, liberating pus. The cavity was douched out with boiled water, and a slough, evidently the appendix, washed out. The cavity was drained by large and small tubes and iodoform wicks. Two days later the drains were removed and clean wicks substituted therefor. On the 20th the edges of the wound were drawn together; a linear cicatrix resulted, and on the 28th he was discharged in good condition.

On March 20, 1896, except for some numbness and disability of the right foot, he was perfectly well and at work, with a solid cicatrix and no bulging.

CASE VI. J. G. B., eighteen years of age, entered November 30, 1895. He played football three days before entrance, and on the night of that day was taken with general abdominal pain. The next day he was up until evening when the pain increased. He vomited several times. His bowels were constipated. The next day he was brought to the hospital with temperature of 104.5°, pulse 120, respiration 48. The tongue was extremely coated, skin mottled, pulse poor. The abdomen was generally tender, especially in the right side, but not much distended, and the recti tense. Rectal examination was negative. The abdomen was tympanitic except at a point about as large as the palm of the hand in the right iliac fossa. No tumor was to be felt. A three-inch incision over the dull area exposed the intestines, injected and covered with lymph flakes. The appendix was found pointing towards the brim of the pelvis and in a sloughing condition. Two or three ounces of rather foul pus were evacuated from about the appendix. The bowels wherever seen were covered with lymph flakes. There was a general peritonitis. The peritoneal cavity was wiped out as thoroughly as possible with dry gauze. Iodoform gauze was packed in the direction of the liver and down towards the deep pelvis, walling off the bowels on its inner border. The appendix was tied off with catgut and removed. He did not improve after the operation. His temperature rose steadily during the next twenty-four hours, and he died of septicemia.

CASE VII. F. H., a school-boy, age thirteen years, entered the hospital on December 3, 1895. Three days before entrance he was taken with general abdominal pain and vomiting. His bowels moved on that day, but not after. The following day the pain became localized in the right iliac fossa, but at entrance was less severe. He had had no previous attacks. At the time of entrance he had a temperature of 101.6°, pulse 120, leucocytosis 32,600. The abdomen was slightly distended, rigid, tympanitic, except for a dull area the size of the palm extending up to the costal border. At this point there was extreme tenderness, but no cake to be felt. A two-inch incision was made over the cecum, adhesions freed, and the swollen, inflamed appendix laid bare, tied with catgut and re-

moved. The stump was cauterized with carbolic acid. No pus was seen, but the wound was packed with gauze. On the third day the gauze was removed and replaced with fresh packing. Two days later the wound was drawn together with crepe lisse, one small wick being left in the sinus. On the 18th he had an attack of vomiting and tenderness, probably due to indigestion, which quieted down during the day. Otherwise he made a good recovery, and was discharged on the 24th, well. On March 20, 1896, he was at school with no signs of any trouble at the seat of operation, and still wearing a swathe (could not afford a belt).

CASE VIII. C. F., aged nineteen years, entered December 21, 1895. He was always well until forty-one hours before entrance. At eleven o'clock at night he had a severe pain in the lower right abdomen, which abated somewhat towards morning. The next day the pain returned with vomiting, which continued all day; the bowels were costive. He had received three-fourths of a grain of morphia before being brought to the hospital. At the time of entrance his temperature was 102.4°, pulse 112, respiration 24. Examination showed a strong, well-developed boy. The abdomen was board-like in its rigidity, and there was general tenderness, with dullness over the right iliac fossa. Rectal examination was negative. The boy was in considerable pain in spite of morphia. A five-and-a-half-inch incision over the point of greatest resistance opened the peritoneum, from which there was a gush of thin and quite foul pus. The bowels were injected and covered with numerous flakes of fibrin, and were bathed in the thin, purulent fluid. The appendix was found to the inner side of the cecum, low down in the iliac region, with a perforation near its base. Fecal concretions were found in the appendix as well as in the cavity—free. The cecum near the attachment of the appendix appeared sloughy. The appendix was tied off with catgut, removed, and the stump cauterized with carbolic acid. A counter-opening was made in the loin, the peritoneal cavity flushed out with large quantities of Ringer's solution, and a glass drainage-tube passed to the lowest point of the pelvis. A rubber tube was passed from the inguinal incision through the lumbar opening, and the original abscess cavity walled off with iodoform gauze wicks. Two provisional sutures were placed in the inguinal incision. The glass tube was sucked out every hour, only clear serum being obtained. The dressing was changed during the night, and in the morning the glass tube was replaced by gauze. On the second day he began vomiting greenish matter in the morning, gradually failed, and died twenty-four hours later.

CASE IX. R. H. (colored), twenty-eight years old, entered January 8, 1896. Three days before he was suddenly seized with general abdominal pain. His bowels were constipated, but he had no nausea or vomiting. Later the symptoms abated, but returned, eighteen hours before entrance, in the cecal region so severely as to require one-third of a grain of morphia. He vomited twice. At the time of entrance his temperature was 103°, pulse 104, respiration 20. The abdomen was not distended, but was very rigid and acutely tender over an area as large as a silver dollar at McBurney's point. There was dullness in the cecal region, but no cake could be felt, and rectal examination was negative. The abdominal cavity was opened by a four-inch incision over the usual point, and the

fascia and peritoneum found edematous. The appendix presented immediately under the abdominal wall, and was well walled off by adhesions. It was tied off with catgut, removed, and the base cauterized with crude carbolic acid. Two iodoform wicks were inserted, one to wall off a small opening into the peritoneal cavity, and one to the base of the appendix. The wound was sewed with silkworm gut, except a small opening for the wicks, which received a provisional suture. The wicks were changed on the third day, removed on the fourth, and the wound sewed tight. On January 17th all the sutures were removed, and a few days later he was discharged. On March 20th he had been at work for a month. The wound was solid and with no bulging, even on coughing.

**CASE X.** This was a pus case, but was operated by the McBurney method. C. K. entered the hospital on January 2, 1896, with a temperature of 100.2°, respiration 20, and pulse 96. He was perfectly well until nineteen days before, when he was seized with general abdominal pain, which later became localized in the right iliac fossa. He was in bed with constipation, but with no vomiting. On the day of entrance he was again seized with pain in the right iliac region, more severe than the original attack, and accompanied by chills and vomiting. There was slight abdominal distention and tympanites, no cake, and nothing to be felt by the rectum. He was kept in bed for subsidence of the symptoms. At this time he had a leucocytosis of 17,000. On the fifth day the tympany and distention had disappeared sufficiently for a small cake to be felt in the right iliac fossa; the leucocytosis had diminished to 15,000, and his temperature was normal. On January 12th the abdomen was opened by the usual three-inch McBurney incision, and a small pus-cavity found just beneath the abdominal wall, containing about an ounce of quite foul pus. The appendix was tied with silk and removed, as was also a piece of thickened omentum. A small wick was left in the wound, and the aponeurosis sewed with provisional sutures of silk. The external wound was sewed with silkworm gut, leaving two provisional sutures. On the next day the wicks were changed and one provisional suture tied. The stitches were removed on the fourth day and replaced by crepe lisse and collodion. He left the hospital on February 4th with a small sinus and wearing an abdominal supporter. Under date of March 20th he writes that the wound had healed, but that quite recently a small opening had appeared at the lower edge of the wound. This, possibly, may be due to an infected silk buried ligature.

**CASE XI.** J. McK., about fifty years of age, a carpenter, entered the medical wards on January 13, 1896. He had always been well until one week before, when he was attacked by general abdominal pain, with fever, headache and vomiting. He had no chills, and his bowels were kept open by cathartics. On the second day the pain became localized in the right iliac fossa, and had continued as a dull ache up to the time of entrance, but tenderness, which at first was marked, had much diminished. There was a leucocytosis of 23,000; his tongue was pale with a white coat; and in the right iliac fossa was a firm, resistant cake, over which there was slight dulness and moderate tenderness. Rectal examination was negative.

I saw the patient on January 14th and operated on the 15th. At this time his temperature was 102°,

pulse 116, respiration 32. There was a pronounced cake in the right iliac fossa, tenderness most marked a little above McBurney's point, and the leucocytosis down to 16,000. A three-inch incision was made along the outer border of the cake and the peritoneal cavity opened at once. After carefully walling off the general peritoneal cavity, the adhesions at the outer border of the wound were broken through, giving vent to foul pus. The finger could be passed down towards the pelvis and upwards toward the gall-bladder in a well walled-off cavity. This was well cleaned up with peroxide of hydrogen and boiled water, and packed with iodoform gauze, the appendix not being obtained. On the next day the central wick was changed; on the second day all the gauze was changed, at which time there was an abundant discharge of pus. Two days later all the gauze was removed and drainage-tubes introduced. After this he made a good convalescence, and when seen by me late in March had only a small sinus, and his general health was excellent.

April 22d. The sinus has closed and reappeared several times, occasionally with pain. To-day he was operated for removal of the appendix by Dr. Cabot. An incision was made into the peritoneal cavity parallel to the original incision, in which is the fistulous opening which was found to communicate with the appendix at about its middle. The appendix was removed.

**CASE XII.** This patient was a woman, and entered October 15, 1895. She had been operated upon in the June previous by Dr. Cabot for acute appendicitis, but the appendix being down in the depths of an extensive abscess cavity was not removable. Since the operation in June she has had a sinus, which has discharged about once in five or six weeks for a week at a time and then closed up again. Each reopening of the sinus had been preceded by pain, swelling, chills and fever. On October 18th she was operated upon, and the appendix found to communicate directly with the opening in the integument by an opening at about its middle portion. The neck of the appendix was completely obliterated, so that none of its secretion could find its way into the intestine. The appendix was removed and the stump invaginated into the cecum. The patient made an uneventful recovery, and was discharged well on the 3d of November. The case illustrates one of the modes of recurrence, and probably not an infrequent one.

This patient was last seen on March 22, 1896, and had been unable to attend to her occupation—dress-maker—on account of pain at the seat of operation, which appears upon any exertion. In the region of the operation wound is a good-sized indurated mass, which is tender to deep pressure, and is apparently the cecum glued up with adhesions. There is no hernia or tendency to the formation of any, and she thinks that she is becoming stronger.

This completes the acute (with one secondary) cases, and leaves the recurrent cases to be considered, that is, the cases in which the appendix was removed "during the interval."

#### RECURRENT APPENDICITIS, WITH REMOVAL OF THE APPENDIX DURING THE INTERVAL.

**CASE I.** About two years ago J. Q. had an attack of severe abdominal pain referred to the right iliac fossa, and accompanied by nausea and vomiting. Since then he has had four or five similar attacks, the

last one occurring one month ago, when a mass was felt in the right iliac fossa. This time he was confined to bed for four days. Six days before entrance the soreness returned, and at the time of entrance, December 28, 1895, a mass the size of the little finger was felt at the point of greatest tenderness. On the next day the abdomen was opened after the McBurney method, the peritoneal incision being one inch long. The finger detected the appendix low down behind the cecum, and it was brought up into the wound. It was large, red, rigid and shiny, much resembling a dog's penis. Amputation was performed by the "peritoneal cuff" method, the stump being disinfected by crude carbolic acid and sutured into the wall of the cecum. The peritoneum was sewed with a continuous suture of silk, and the muscles and fascia united by interrupted sutures of the same material. The skin was closed with silkworm gut, which was removed on the eighth day. Except for occasional retention of urine, the patient did perfectly well; he left his bed on the sixteenth day, and was discharged on the twenty-first day without an abdominal supporter.

March 30th: He writes that he is well and has no hernia. No supporter used.

CASE II. E. D. McC., aged eighteen years and single, entered on January 8, 1896. Four years ago he was sick in bed for two weeks during the summer with pain in the lower abdomen and vomiting. The pain was controlled by morphia. Since then he has had six attacks each year, some of them not being severe enough to incapacitate him for his work. The last attack was two months ago, and was the only one except the first one in which vomiting occurred. Abdominal palpation and rectal examination yielded no definite results. On January 12th the abdomen was opened by the McBurney incision, with an inch opening into the peritoneum. Later the first incision was enlarged slightly by cutting for a half-inch in the linea semilunaris. The appendix was finally discovered firmly glued to the under surface of the cecum, which was low down on the pelvic brim. The appendix was tied at the base, and then gradually dissected off towards the apex. After removing the organ and disinfecting the stump with crude carbolic acid, the peritoneal cuff was stitched over the end, and the whole stump invaginated into the cecal wall in the usual manner. The peritoneum was closed with a continuous suture of catgut, the divided fibres of the linea semilunaris with interrupted catgut, the aponeurosis with the same material, and the skin by a buried suture of silkworm gut. This last suture was removed in ten days. He was up on the sixteenth day, and was discharged without an abdominal supporter.

CASE III. R. R. was operated on January 17, 1896. He was twenty-eight years of age and single. His present trouble began eighteen months before, with violent pain in the epigastrium soon extending into the right side. He was sick in bed for a week with vomiting and chills, the pain being controlled by morphia. Considerable tenderness persisted in the right side for several days after the attack. Four months later he had a second attack with about the same duration, the pain being more severe, but the vomiting less. Since then he has had three attacks of varying severity, the last one two weeks ago. At the time of entrance the right rectus muscle was rigid, but no cake was to be felt. A three-inch incision was made at McBurney's point, and a parallel incision

through the aponeurosis. At right angles to this incision another was made between the fibres of the internal oblique and transversalis muscles, and, finally, the peritoneum was opened by a one-inch incision. The finger found the appendix overhanging the brim of the pelvis. The linea semilunaris was incised downwards for an inch, and the whole wound pulled down with retractors, thus exposing the thickened and cord-like appendix. The latter was tied at the base, and a circular cuff of peritoneum turned back. The appendix was then removed, the stump cauterized with ninety-five-per-cent. carbolic acid, and the cuff sutured over it. The whole stump was then buried by suturing the wall of the cecum over it. The peritoneum was sutured with continuous silk, the linea semilunaris and aponeurosis — separately — with interrupted silk, and the skin with silkworm gut. On February 4th he was walking about the ward, wearing a swathe.

#### A MODIFICATION OF THE MCBURNEY INCISION FOR APPENDECTOMY.<sup>1</sup>

BY J. W. ELLIOT, M.D.,  
Surgeon to the Massachusetts General Hospital.

APPENDECTOMY for chronic relapsing appendicitis is now well established, and I find myself an enthusiastic advocate of the operation. There is no room for doubt that many dangerous and fatal operations for acute appendicitis can be avoided by the timely removal of an appendix which has shown symptoms of disease.

The safety of the operation between the attacks is illustrated by the fact that in my own cases, which now number thirty, there has not been a single death, and most of the patients have made rapid recoveries. My colleagues at the hospital have had the same good results.

In recommending this operation not only should the immediate mortality be considered, but all possible complications dependent thereon must be kept in view. The possibility of hernia is the most prominent among such considerations. As a certain percentage of hernia is inevitable after operations in acute cases where the wound is kept open by gauze or drainage-tubes, the almost certain avoidability of hernia would be an additional reason for doing the operation between the attacks.

It is my belief that hernia is rare after this operation, by whatever method it may be done; nevertheless, it is of interest to perfect the method and thereby reduce the chance to a minimum.

In the McBurney operation the skin incision is made an inch inside the spine of the ilium in an oblique direction, passing through skin and connective tissue only. The next incision passes through the aponeurosis of the external oblique in such a way as merely to split the fibres and not divide any of them across. The aponeurosis is split a distance of about four inches. The edges of the wound in the aponeurosis are pulled apart with retractors so as to uncover the surface of the internal oblique, the fibres of which lie at nearly a right angle with the incision made in the external oblique. Then the direction of the incision is changed from nearly vertical to nearly transverse, and the fibres of the internal oblique and

<sup>1</sup> Read before the Surgical Section of the Suffolk District Medical Society, May 6, 1896.

transversalis are separated without cutting. When the appendix has been removed, the opening tends to close of itself, as the muscular fibres fall into their natural place.

I have done this operation ten times, and have been much pleased with it. When the appendix is in its normal position and is not difficult to get out, it is almost an ideal operation; but when difficulties arise and the incision has to be enlarged, it has certain serious objections. The first objection is that in difficult cases the necessarily constant and hard retraction of the muscles is apt to injure the tissue of the wound surface so as to make its healing less perfect, and sometimes to cause suppuration. Another objection is that if it is found necessary to enlarge the wound, not only is the advantage of the original McBurney incision lost, but we have a ragged and complicated wound with two muscular layers stripped widely apart. Such a wound is not well adapted to drainage if pus is unexpectedly found.

To meet these objections I begin the operation by making a horizontal cut through the skin and the aponeurosis of the external oblique, beginning one-half an inch inside the anterior superior spine of the ilium, and extending to the linea semilunaris. The fibres of the external oblique are thus cut across, but the fibres of the internal oblique and the transversalis are separated as in the McBurney operation. In my operation the whole incision is a cross cut, the external and internal incisions running in the same direction. There is no stripping up of the external oblique. This incision can readily be enlarged upwards or downwards in the linea semilunaris, or may be extended into the rectus if necessary. In closing the wound I pass two stitches through all the layers of the abdomen, to prevent a dead space, and unite the cut edges of the external oblique with a continuous buried silk suture.

I have done nine cases by this incision, and the results have been very satisfactory. (Patients were shown at the meeting.) As in the McBurney operation, no nerves or vessels are cut. There is no resulting anesthesia of the skin. The aponeurosis of the external oblique has united well in every case, and I see no objection to cutting it.

In one case, where it became necessary to curette and drain a softened mesenteric gland, no suture was used; and yet the cross-cut incision showed no tendency to gape open, but, on the contrary, the wound healed by granulation after the gauze drain was removed, and has shown no tendency to hernia.

By this incision, with the patient in the Trendelenburg position, the cecal region can be easily and thoroughly explored, and the appendix can be dissected from behind the cecum or from the brim of the pelvis. As the cross-cut incision can be made directly over the base of the appendix, it has the advantage of directness when compared with an incision in the linea semilunaris.

**A WONDERFUL ESCAPE.**—The *Lancet* is responsible for the following account of an almost incredible escape: "William H. Bartlett, aged eighteen years, a few days ago fell down the shaft of North Biddick pit, in the county of Durham, a distance of 270 feet, into some 13 feet of water, and upon being rescued was found to have sustained trifling injuries—both wrists sprained, and a few scalp wounds."

## ON THE COMPRESSION OF THE FRONT OF THE FEET.

BY E. E. BRADFORD, M.D., BOSTON.

On a shelf in the Peabody Museum at Cambridge a valuable collection of pre-historic foot-prints in volcanic mud from Nicaragua can be seen. The fact that they were found twelve feet under ground, beneath a deposit which must have required ages to accumulate, is proof that they are of great antiquity. The impressions are of shapely, muscular feet, with a well-formed arch.

If the observer, prompted by an examination of these foot-prints, watches the tracks of pedestrians on a sidewalk covered to a depth of a few inches with freshly fallen snow, or on a thawed path with a thin layer of mud, the fact forces itself upon the attention, that shoes as worn by our civilization must bind the



FIG. 1. Prehistoric foot-print in volcanic mud (Nicaragua).

front of the feet to a degree which cannot but be injurious to perfect gait, as well as to the shape of the feet. This opinion is supported if any one watches a number of people in our streets, and notices the fact that a large number walk with but little use of the front of the foot, throwing the weight as if they stepped from heel to heel rather than in a regular heel-and-toe gait. In contrast to these foot-prints, the gait of barefooted boys upon a dusty road, or upon a sand beach is of interest, and shows clearly how the natural gait differs from that of those with feet the front of which are bound by shoes. This is confirmed by any one who has watched the free stride of barefooted races, or examined photographs of sandal-wearing people; which indicates that our civilization may have injured the strength of the human foot—a civilization which has raised mankind from a race of hunters and nomads to a population which avoids, by riding or driving, foot journeys.

An examination of antique and classic sculpture shows in a measure the shape of the feet in the earlier ages. The Egyptian statues give evidence of a broad-

ening of the front of the feet in a sandal-wearing people; also the fact that in sitting and standing the feet were kept nearly parallel and not turned out. The Egyptian hieroglyphics and bas-reliefs show

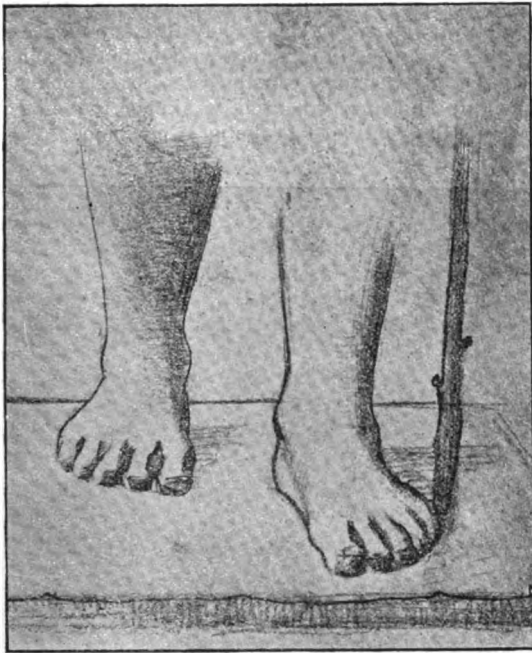


FIG. 2. Drawing from statue in a museum of Boulak, B. C. 2000, showing slight angular divergence in walking.

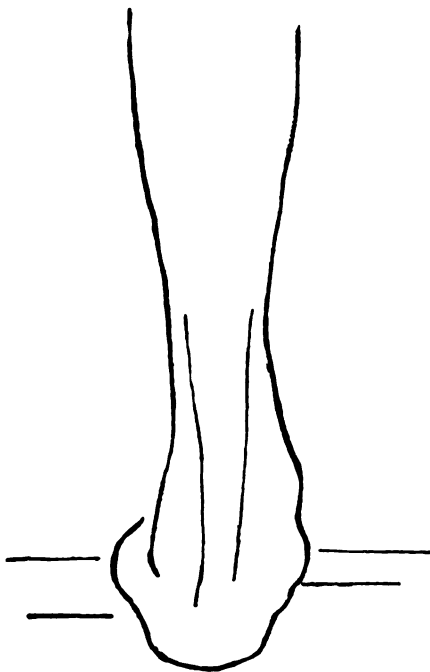


FIG. 3. Drawing from photograph of a weak ankle seen from behind, showing the sinking inward at the metatarsal articulation, which can be prevented by abduction of the great toe.

clearly that though a sandal-wearing people and a laborious people, a high arch was probably the rule, as it is always indicated in the feet, even of the working class. The Assyrian bas-reliefs show muscular feet with well-shaped arches, as is the case with the Toltec

sculptures. In Greek art at its perfection, the shape of a perfect foot is well preserved, the phalanges being always kept on a line of the metatarsal bones, the space

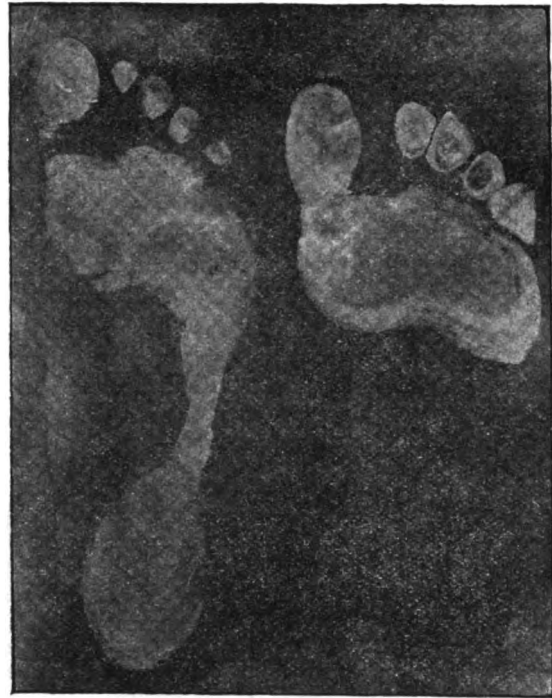


FIG. 4. Imprint of normal foot.

- (a) Weight thrown chiefly upon the heel; slight weight on the front of the foot.  
(b) Weight thrown entirely upon the front of the foot, showing the separation of the toe and the adduction of the first metatarsal.

between the first and second toe being well marked. The statues are all well placed upon their feet, and the eversion of the foot, or a wide angle between the axes of the feet in standing (characteristic of a weak foot), is not seen, except to a slight degree in the later and debased Greek art. The ideal shape is perhaps best represented by the famous foot of the *Hermes* of Praxiteles.

It is noticeable in all of the best Greek statues that the separation of the great toe from the second toe in standing and in walking is well marked, a fact indicative of a sandal-wearing people, and in a measure lost in modern feet. In the famous statue of the disk-thrower, unusual strength of the flexor muscles of the phalanges is indicated, a strength which does not exist in modern shoe-wearing people. In the art of the Renaissance, the shape of the foot is often neglected or badly copied from the classic. Modern sculpture neglects careful modelling of the foot, or imperfectly follows classic models. Some of the modern realists in sculpture present in their studies, the common distortion of the great toe, almost universal in shoe-wearing people, and in many of the modern statues, the eversion of the feet seen chiefly in those were flat-foot or weak feet, copied in all probability from a badly-shaped model. When as careful and thoroughly-trained artists as Falguière and Gerome depict a foot distorted with a *hallux valgus* as belonging to the types of physical beauty there is sufficient reason for believing that the shape of the normal has not been carefully studied. Pisano, the father of realists in sculpture, in the monument to



Scovegni at Padua, reproduces a deformity of the foot from shoes, even in the sixteenth century, which would equal modern specimens.

From the evidence afforded by sculpture, it is clear that the antique barefooted races — the Assyrians, Egyptians, Toltecs — were not flat-footed. This opinion is supported by an examination of the feet of either sandal-wearing and barefooted people of the present day.

Although shoes are not essential to locomotion, for convenience and comfort shoes of some sort are worn by all people, even savages, when this simple luxury is possible. The primitive shoe is made of

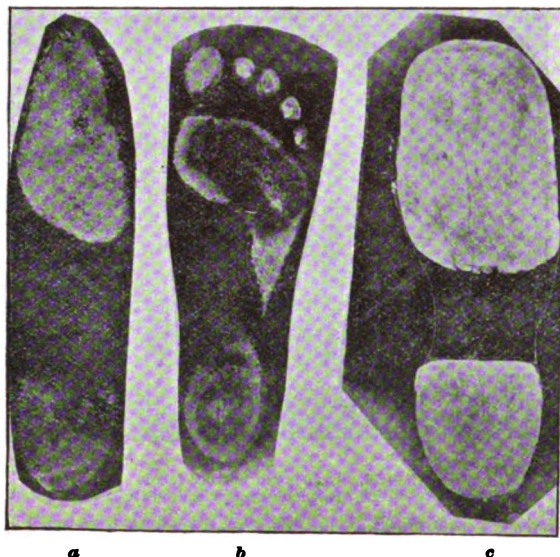


FIG. 5. Foot-prints and prints of shoes.  
(a) Print on smoke-paper of a pointed shoe.  
(b) Imprint of foot wearing pointed shoe, both indicating the compression of the front of the foot.  
(c) Print of a workman's shoe, showing proper room for toes.

raw hide or leather, shaped about the feet, conforming entirely to the shape of the foot, and this is true of all simply-made shoes. The modern shoe, however, is shaped on a last and made, not in accordance to the shape of the foot, but according to the custom and fashion of the day to which the foot must conform so that the shoe may be regarded as a bed of



FIG. 6. Modern shoe, necessarily compressing toes.

Procrustes. The shape of the last is never an anatomical one, but always a conventional one; it is usually pointed more or less, and the narrowest part of the shoe is always where it should be widest, namely, either at the toes or the front of the boot. When the foot slips forward the toes are necessarily crowded, and the natural spread of the toes at the end of the step is prevented. As shoes are made, the part which stretches the most from the wearing of the boots, is the part behind the toes; the boot therefore becomes looser and broader except at the tip, and this increases the crowding of the toes as the foot slips forward.

The result of this is not necessarily injurious, as in ordinary locomotion the toes are not brought into play, and the toes can submit to a good deal of crowding, in people walking ordinarily with a heel-to-heel gait; but in many instances an injurious crowding of the toes results and various deformities are developed which although giving rise to but little annoyance during youth, materially interfere with locomotion in old age. Of these in-toe, crumpled toe, overlapping toe, injury to the transverse arch, weakened foot and flat-foot may be mentioned as the most common.



FIG. 7. Photographs of casts of feet distorted by improper shoes (from Walsham).

The most important of the evil effects of modern shoes is seen in weakening the power and limiting the action of the great toe, resulting in the more severe cases in a distressing degree of deformity, technically termed hallux valgus.

A comparison of the bones of the human foot with that of the larger monkeys shows that in the propulsion of walking, the great strength of the first metatarsal and phalanges of the great toe is of importance. It will be also seen that separation of the great toe from the other toes is allowed for by the facet of the first cuneiform, which inclines to the inner side. The object of this adduction of the great toe is to add greater strength to the foot as a means of support. If the bared foot of a young child or of an adult where the muscles have not been weakened by shoes is examined, it will be found at the end of the step when the weight falls upon the front of the foot the separation of the great toe from the other toes takes place. This is due to the adduction of the first metatarsal, and thereby the base of support is noticeably broadened. After shoes are worn this power of adduction of the greater toe is diminished, and in many cases entirely lost. Where pointed shoes are worn, or shoes which prevent the inward turn of the great toe at the end of the step, the great toe is not only weakened but pressed somewhat to the outer side, a slight degree of this deformity being almost universal in shoe-wearing people. In many instances this outward deviation of the great toe becomes a serious deformity,



developing exostoses in old age from continual attacks of periostitis of the head of the first metatarsal, which being unprotected by the phalanx is exposed to irritation and develops a subacute osteitis. As a complication, an inflammation of the skin and underlying bursa, known as bunion, is developed, which increases the discomfort.

But even where through the strength of the ligaments the great toe does not develop so marked a deformity, the fact remains that its muscles are weakened by the cramping of shoes which obliges the individual to turn the feet out more in walking than is normal. Barefooted races walk with but slight divergence of the feet, for the reason that at the end of the step, the adduction of the great toe broadens the foot enough to support the weight readily. Where this is not possible the feet are turned outward to increase the size of the base of support. This brings a greater strain upon the tibial muscles, but places the foot in a position to develop the so-called flat-foot, so common, especially, in individuals who are obliged to stand continuously upon their feet, as waiters and nurses.

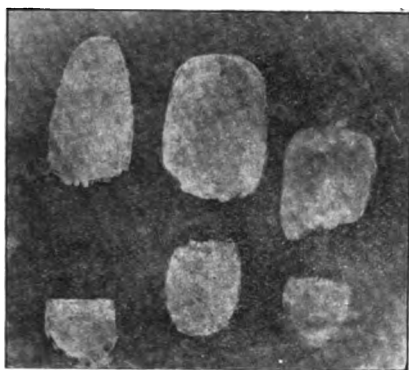


FIG. 8. Prints of children's shoes.  
(a) Compressing the toes. (b and c) Giving room for toes.

It is hardly to be hoped that a reform in the shape of shoes worn by adults can be brought about by the efforts of physicians. People wear shoes according to their fancy, and physicians are no more consulted as to the shape of the shoes to be purchased than as to bills of fare furnished at hotels. It is to be hoped that in time a gradual improvement will take place, and in fact something of the sort has been already accomplished in the shoes for men. Efforts in the right direction have been made, and further effort will also follow. It is certainly desirable, however, that physicians should make an earnest effort in regard to the shoes of the children.

An examination of the feet of a number of children makes it evident that not only is the weakness of the muscles of the front of the foot developed at a very early age, but the distortion of the toes from shoes is present in fully two-thirds of the cases of children over two years of age who present themselves, an evil which can easily be prevented if shoes are properly made. It should be borne in mind that in children's shoes the broadest part of the shoe should be, not as is ordinarily made, in the middle of the foot, but at a cross line from the end of the small toe to the base of the first toe, and should allow for the free play of the great toe to the inside at the end of the step. This not only prevents injurious crowding of the toes and

weakening the muscles, but it allows the support to be added which was designed to check the inward rolling out at the medio-tarsal joint, which, when excessive, develops what is known as flat-foot. In the foot, when additional weight is thrown upon it, what may be termed a sagging of the arch to the inner side, takes place as the tibial muscles become relaxed. A twist of the foot at the medio-tarsal joint takes place: this occurs in a slight degree even if the weight falls chiefly on the back of the foot, but if the weight falls as well on the front part of the foot, this change is to be seen, especially in people with weak muscles. This inward sag drags the head of the metatarsal bones inward, together with the cuneiform bones and the head of the astragalus and os calcis and cuboid. In a normal foot, however, this can be checked by the adduction of the first metatarsal separating the great toe from the other toes, by acting as a prop to limit the rolling of the foot. This inward inclination of the great toe is seen in young children and in the barefooted and sandal-wearing nations.

Adults can withstand this binding of the front of the foot from shoes with much less injury than the weaker bones and ligaments in the feet of children. If this compression of the toes is guarded against in children, much can be done to prevent the future development of deformity. Even if it is difficult to induce adults dominated by custom to change the fashion in the shape of shoes, it is entirely feasible to induce the thoughtful community to furnish its young children with proper shoes. What the shape of these should be can easily be recognized by physicians if the above well-known facts are borne in mind, and if it be remembered, that the sole should not be simply straight in its inner edge, but curved slightly inward, and so made that when the weight is thrown upon the foot wearing a shoe, a perpendicular line from the edge of the astragalus should fall but little to the inner side of the line from the toe to the heel.

When the painter David wished to immortalize Mme. Recamier, he painted her reclining with bared arms and feet of a shapeliness which cannot but command admiration.

Perhaps in the twentieth century, efforts may be made to preserve the shape of the feet, as the nineteenth century has attempted to do for the beauty of the teeth and hands. At present it is the boot which is admired, not the foot, to the injury of the latter.

It is well to remember that it is not the tail which separates man from the anthropoid apes, but the shape and strength of the foot, especially of the first metatarsal and its accompanying phalanges. It is that which gives to man the erect gait, and it is a mutilation not to preserve this given strength.

#### NOTE ON INFANTILE SCURVY.<sup>1</sup>

BY JOSEPH LEIDY, JR., M.D., PHILADELPHIA,  
*One of the Physicians to the Pennsylvania Hospital and Institution  
for Feeble-minded Children, Elwyn.*

THE subject of infantile scurvy as a special disease has received but passing attention at the hands of American authors. To Wm. Perry Northrup, of New York, the credit is due of having been the first American writer to so treat the affection, though the subject has received rather liberal treatment at the hands of a

<sup>1</sup> Read before the College of Physicians, Philadelphia.

number of Continental writers. Heubner, of Leipzig, credits but 11 of 50 cases which he tabulated as occurring outside of England, to the United States. Starr had seen five cases during the sixteen months previous to December, 1895. The writer observed a notable increase in the number of cases at his clinic in the Pennsylvania Hospital during the past year; in addition, two in private practice; in all, nine.

The disease, if we may so term it, appears to be a not uncommon one; and the increase may be actual, as was the case with the clinical material at the Pennsylvania Hospital, or apparent, owing to the old classification, which included such cases under the head of rickets, purpura hemorrhagica, hereditary syphilis, etc. It is the purpose of this note to treat infantile scurvy as a distinct and separate disease. It occurs in the families of the wealthy as well as among the poor; indeed, the most pronounced case occurred in a family of ample means, where more than usual care and attention were given their offspring.

Until recently the major portion of the profession was inclined to view with satisfaction and a considerable degree of approbation sterilized milk as the food *par excellence* for infants, and a well-justified substitute for the various proprietary infant foods. The unusual frequency of infantile scurvy and the relation which various infant foods (*including sterilized milk*) bear as a causative factor, suggested the presentation of the following brief note.

#### DEFINITION.

Infantile scurvy may be defined as a disease characterized by mal-nutrition, developing insidiously, attended with general debility, anemia, ecchymoses in various parts of the body (principally the lower extremities and mucous membranes of the mouth), sponginess of the gums (going on to ulceration in severe cases), general muscular weakness amounting to immobility in the lower extremities (going on to pseudo-paralysis), attended with swelling about the joints, and excessive tenderness along the lines of the long bones, rarely terminating fatally when early placed under proper treatment. The symptoms vary according to the severity of the attack, etiologically holding an important relation to the deprivation of fresh foods, and almost immediately ameliorated by the administration of a proper diet. This, the so-called *therapeutic test*, becomes of great value in diagnosis.

#### ETIOLOGY.

Predisposition to rickets, scrofula, must of necessity increase the tendency to the production of the disease. That in the various proprietary infant foods and in the sterilization of milk we lack, in certain cases, a certain something which is needed for a proper nutrition of the tissues, there can be no doubt.

#### SYMPTOMS.

All the subjects present the evidences of mal-nutrition, anemia varying in degree. The red blood-corpuscles are decreased in number, with a corresponding diminution in the percentage of hemoglobin, the white corpuscles varying slightly. The blood-count of the cases under observation ranged from 2,200,000 to 3,800,000 c. c., hemoglobin 50 to 80 per cent. Microscopically, the red blood-corpuscles presented an irregular appearance poikilocytosis, with no other notable change. In one case the red blood-corpuscles showed slight pigmentation.

#### HEART AND CIRCULATORY APPARATUS.

Hemic murmurs were present in four instances, varying with the amount of anemia. Pulse rapid; temperature ranged between 99.8° and 101.5° F.; respiration averaged slightly above the normal.

Lungs negative, except in two cases in which fine moist râles were heard over both lungs posteriorly; no hemoptysis.

#### MUCOUS MEMBRANES.

The condition of the gums was variable, from slight sponginess to severe ulceration. In one case the swelling of the gums caused over-lapping, completely obscuring the front teeth from view; hemorrhage was occasioned by the slightest irritation. In other cases simply petechiæ, showing a tendency to fuse, were noted, with ecchymoses in the fauces and soft palate. In one case, where the gums were treated by the attending physician with a solution of nitrate of silver, ulceration with exuberant granulation formed along the upper gums, completely obscuring four upper teeth, and presenting a gangrenous appearance, which bled upon the slightest touch. In milder cases simply sponginess of the gum existed. Bowels showed a tendency to looseness, though constipation existed in one case; in none was blood passed in the stools, though the condition has been noted by different observers.

#### KIDNEYS.

The specific gravity of the urine ranged 1.018 to 1.026; high colored; traces of albumin in three cases, with hematuria as a later manifestation. In one case hyaline and blood-casts were observed. The age of the children made a careful observation in most instances unsatisfactory.

#### NERVOUS AND MUSCULAR SYSTEMS.

There was general debility, languor, peevishness and irritability. Weakness in the lower extremities was marked, with a decided tendency to pseudo-paralysis—to a much less degree in the arms. All favored the recumbent posture, with the limbs drawn up and flexed. When sitting would throw the body forward, resting upon the thighs; this posture was characteristic. Electrical reactions normal, knee-jerk *minus*. In but two cases were there enlargements about the epiphyses; there was considerable tenderness over the tibia and along the course of the femur and about the joints.

As all the patients presented a group of symptoms almost identical, I will occupy but a few moments with brief notes on several of the more interesting, presenting the severest and the mildest type.

#### CASES.

CASE I. G. G., age ten months, of healthy parents, was presented at the clinic in the Pennsylvania Hospital, with the following record: Family history negative; no history of syphilis, tuberculosis, rickets or alcoholism. Parents unusually healthy. Patient was one of four children, all healthy and strong; bottle-fed. Mother noticed, five weeks previously, that the food did not appear to agree, though she persisted in its use. One week previous to bringing patient to the hospital, noticed the gums were red and swollen, and that the child cried out when the legs were touched or moved. The physician who saw the case pronounced it rheumatism, and so

treated it. On admission the temperature was 100°, pulse 126, respiration 24; presented the appearance of advanced mal-nutrition, anemia, lips and ears bloodless. The anemia suggested that produced by hemorrhage. Patient was irritable, restless, unable to sit up. When an attempt was made, sat with body resting forward, and cried to be placed on its back; indisposition to move the lower extremities; arms were slightly affected; gums ulcerated (overhanging two upper teeth), and bled upon the slightest irritation; showed a disinclination to take milk through the nipple. There were ecchymotic spots on lower gums and several petechial spots over tibia. Bowels constipated; urine high-colored, otherwise negative. Blood examination: 2,600,000 red blood-corpuscles, with one white to 200 red; hemoglobin, 55 per cent. Heart and lungs: hemic murmurs, with a few moist râles over both sides, posteriorly. Muscular system: lower extremities painful on motion, with great tenderness about both knee-joints, and along the shaft of the femur.

Treatment consisted in Pasteurized cows' milk, orange-juice and beef-juice. Progress was slow. The parents were above the average in intelligence; and though we were assured proper care was taken in the preparation of the food, we insisted upon a specimen being brought us for examination. The mother then acknowledged that though she was using the orange-juice and beef-juice, she was also using a prepared food suggested by a friend — Liebig's. She agreed in the future to carry out the directions given; in less than one week from the time Pasteurized cows' milk was used, the patient began to improve; the gums ceased to bleed, and in ten days had healed perfectly. With massage of the lower limbs, motion and full power returned. In three weeks from the first visit to the hospital the patient was discharged, practically well, with no evidence of previous illness except slight anemia, for which small doses of citrate of iron were administered.

The diagnosis of rheumatism and the rapid amelioration of acute symptoms under change of diet, are the points of especial interest in this case. Such is the type of case which occurred during the prolonged administration of one of the well-known and frequently used proprietary infant foods.

CASE II. The following notes are of a case in private practice and one which was under constant observation:

R. D., age eleven months, of healthy parentage, one of three children, came with the history of having rheumatism. The symptoms were entirely referable to the lower extremities, which were painful to the touch, though no evidence of swelling could be detected. When the soles of the feet were pricked the child would make partially successful efforts to draw the limb up; pressure along the femur or over the knee-joints occasioned considerable pain. Petechial spots were present over both tibia and on the lower gums. There was slight anemia. Heart and lungs negative; bowels loose. As the patient was upon sterilized milk, the diet was continued, and in addition beef-juice and orange-juice; but little progress was made. At the end of ten days the gums were decidedly spongy, the limbs not at all improved (owing to the tendency to diarrhea), and considerable gastro-intestinal irritation. Pasteurized milk with Fairchild's peptogenic powder was substituted for the sterilized

milk, in addition to beef-juice and orange-juice, which were continued. Without it were possible to witness the rapid progress toward recovery which this case made, I fear any account would be incredible. Suffice to say, that in four weeks, with the exception of the anemia, the symptoms had entirely disappeared. The patient had regained entire control of the lower extremities, is now increasing in weight, and the anemia rapidly disappearing.

Rheumatism was again the error in diagnosis in this case, and again a point of considerable interest, as well as the rapid amelioration under change of diet rich in fresh food. This child had been brought up on sterilized milk. Of the nine cases which I have had an opportunity of studying personally, six were fed upon one of the proprietary infant foods, three upon sterilized milk — all bottle-fed.

#### DIAGNOSIS.

From the insidious nature of the affection, the history of the cases and the character of the symptoms there can be no difficulty in reaching a correct diagnosis. To recapitulate: general debility, anemia, sponginess and bloody extravasation of the gums; petechiæ and ecchymoses upon the lower extremities when present; the enlargement and tenderness about the joints and along the shafts of the bones; and the apparent loss of power, muscular rather than nervous in origin, in infants fed upon any of the proprietary foods or sterilized-milk preparations, present a picture almost characteristic. The slight fever (frequently entirely absent) becomes an important point in the differential diagnosis from *acute rheumatism*, the swelling in scurvy being above and outside of the joint proper — in rheumatism confined to the synovial sack; and, finally, the *therapeutic test*, justly so called, which is invariably attended by the rapid amelioration of the symptoms.

The history of the case, the absence of evidences of rickets, and the subsidence of the symptoms under treatment, all go to exclude the diagnosis of an affection the symptoms of which are usually of pre-natal origin. In those cases where scurvy occurs in children previously the subject of rickets, the diagnosis might appear difficult; but even here the rapid disappearance of the acute symptoms under treatment would aid us in eliminating a distinctly constitutional disease.

#### TREATMENT.

Of treatment sufficient has been said. The use of a diet rich in fresh foods, of a character suitable to the age of the child, beef-juice and orange-juice, with the use of Pasteurized (or what has been termed humanized) milk for infants, has proved ample in our hands. Medicinally the use of minute doses of citrate of iron internally, massage, hot and cold douches to the lower extremities, are of use where the progress is slow in those cases of pseudo-paralysis.

In presenting this brief note on infantile scurvy, it is to be hoped some interest will be aroused in an affection which until recently received but little attention as a *special* disease of infants, and in the important relation which sterilized milk holds as a causative factor, in addition to the various proprietary infant foods. Until this time I can find no reference to a case of infantile scurvy occurring during the administration of Pasteurized milk.

Owing to a rapid recovery in all the cases under observation, no opportunity was given for examining, post-mortem, any of the lesions; those observers who have had such an opportunity, however, described well-marked lesions, principally of a hemorrhagic character, occurring in all the tissues and organs of the body.

## Clinical Department.

### A CASE OF MYXEDEMA.<sup>1</sup>

BY HAROLD METCALF, A.B., M.D., WICKFORD, R. I.

WHATEVER may be our opinion of the use of animal extracts in the treatment of disease, and of the thyroid extract in the therapy of myxedema, we can but admit that the results attained, in the case about to be described, were as interesting and marvellous as they were successful.

While the use of animal matter in some form or other as medicine, is probably as old as the practice of medicine itself, and while its use in the remote past and more modern times, savored on the one hand of barbarism and superstition, and on the other of quackery and notoriety, it is only within a comparatively few years that the administration of animal tissue in some form or other, has been guided and founded by physiological and scientific facts and reasons.

Previous to the use of the thyroid extract the disease was hopelessly incurable, while now we may say that we are as sure of favorable results in a case of myxedema as in malaria or syphilis.

The case I now present briefly is as follows: For five years I had met occasionally in a casual way Mrs. A. At our first meeting I was impressed by her strange appearance and manner, but as I was not her family physician, I did not feel at liberty to broach the subject of her health, although I began to be convinced that her peculiar appearance was due to myxedema. At length, in July, 1895, an opportunity presented itself to question the patient and determine if my surmises were correct. Mrs. A. was an American, aged forty-five, married, and the mother of three children. There was no history of miscarriages, excessive physical or mental strain, or profuse menstruation. Her mother died of some pulmonary disease, probably consumption.

Two brothers have had asthma, and she herself in the past year has been slightly asthmatic.

Her weight was about one hundred and eighty pounds, while the abdomen was very prominent, suggesting dropsy. Her walk suggested a duck waddling. Mentally she seemed dull, and always gave a placid acquiescence to every proposition. She would start to perform some household duty, and while in the very act forget the object she wished to attain.

Her complexion was almost a lemon yellow, the skin very dry, and the cheeks showed a circumscribed, almost hectic flush. The skin nowhere pitted on pressure, although from its appearance, without testing, one would call it edematous. The hair was almost absent from the head, so much so, that she wore a wig as seen in Fig. 1. The face was without expression; the eyes apparently half-closed, owing to the heavy, thickened lids. The nose was broad and blunt, while the lips were thick and without expres-

sion. The tongue even seemed large, and articulation was difficult and not easily understood. The teeth were badly decayed and the gums spongy. The hands were broad, and the fingers blunt and square. The thyroid gland could not be detected.

Pulse was regular, but not strong. Temperature 98°. Auscultation and percussion revealed nothing abnormal. Sensations hardly up to the normal, and reflexes somewhat diminished. The urine revealed nothing abnormal, although these cases are said to show a diminution in urea.



FIG. 1.

Immediately five-grain tablets of the extract of the sheep's thyroid were prescribed. Those made by Burroughs, Welcome & Co., of London, were used throughout the treatment, except once, when tablets prepared by another firm were tried and found not so satisfactory. In three weeks the result of their administration was most striking. The most noticeable effect was the loss of flesh, while the countenance and color and moisture of the skin began to assume a more natural appearance. Soon a fine, downy growth of hair began to appear on her bald head, and the skin came off in flakes from the body, as in scarlet fever. The dose of thyroid extract was once increased beyond fifteen grains a day, but palpitation and nausea soon developed, and from that time on fifteen grains was the maximum dose. Subsequently the dose was gradually decreased, until now the patient frequently passes a week or two without medicine.

Her appearance after one year of treatment is shown in Fig. 2. Her countenance has an animated appearance; her eyes are apparently larger, due to the disappearance of the edematous-like lids; the nose and lips have lost that thick, heavy look; while the wig is dispensed with, and instead, the hair is parted and trained, and to-day is even worn in a knot behind.

The most noticeable result of treatment in this case is the loss of flesh—nearly fifty pounds; and it may be asked, Is the thyroid extract a so-called antifat remedy? Would the same results follow if used in simple obesity? Experience of others may determine. In this case we have not only loss of flesh, restoration of hair and improved personal appearance,

<sup>1</sup> Read before the Rhode Island Medical Society.

but in addition — a much more important factor — improved health, both physically and mentally.<sup>2</sup>

The successful use of the thyroid extract in the treatment of myxedema has caused some enthusiasts, reasoning from a false analogy, to claim that, if the thyroid extract is curative in myxedema, why then should not "cerebrine" be equally successful in cerebral diseases and "cardeine" in heart disease and so on *ad libitum*?

The heart and brain, and many other organs as well, are consumers, not producers in the animal economy; and may not we restrict (theoretically, at



FIG. 2.

least) the use of animal extracts to those organs that are producers — are secretive, like the thyroid, spleen, pancreas and liver? It is remarkable how little we really know of the true function of many such organs; and while our knowledge is so incomplete we cannot fully recognize the various symptoms produced by diseased conditions, whether of atrophy, hypertrophy or degeneration. Therefore, it behooves us in the use of animal extracts to approach the subject, not experimentally, but with a true scientific spirit.

#### FRACTURE OF THE FIRST PHALANX OF LITTLE TOE.

BY HAROLD WILLIAMS, M.D.

MR. A. came to me on July 22d, complaining of injury to his right little toe. While bathing in the sea he struck his foot against a board, which penetrated between the fourth and fifth toes forcing the little toe outward and backward. The blow was a very violent one and after the accident the little toe was swollen and painful, and was separated from the fourth toe.

Upon examination I found a transverse fracture of the first phalanx; by fixing the tarsal head of the bone crepitation was distinctly felt; there was greatly increased mobility, and when at rest the toe was separated from its neighbor apparently by the contraction of the *abductor minimi digiti*.

<sup>2</sup> Since writing the above I have learned that Dr. Allen M. Starr, of New York, has treated obesity successfully with the thyroid extract.

The fractured bone was easily restored to its position and retained in place by a band of strapping which attached it to the fourth toe as a splint.

The case is reported because of its rarity; and the following quotation from Ashhurst's "Encyclopædia of Surgery" is of interest in this context: "Fractures of the phalanges of the toes are very rare except from great violence. Yet I have several times seen them produced by accidents to persons bathing at the sea-shore."

In a somewhat long experience in practice at the sea-shore and where I have seen all sorts of accidents happen to persons bathing in the sea, this is the first time I have ever known this particular injury to occur.

#### Reports of Societies.

##### SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, May 6, 1896, Dr. M. H. RICHARDSON in the chair.

Dr. J. COLLINS WARREN read a paper on

THE PRESENT STANDPOINT OF THE TECHNIQUE OF APPENDECTOMY, ILLUSTRATED BY RECENT CASES.<sup>1</sup>

Dr. J. W. ELLIOT presented a paper on

CASES ILLUSTRATING A MODIFICATION OF THE MCBURNEY INCISION FOR APPENDECTOMY.<sup>2</sup>

Dr. CABOT wished to say a few words about what he had learned in regard to the treatment of acute appendicitis within the past year. Previous to six months ago it had been his practice, in cases of acute circumscribed abscess about the appendix, to open directly over the abscess and after evacuating the pus, to remove the appendix if it was readily accessible; but when it was not easily found, he had thought it better to content himself with the evacuation of the pus, leaving the appendix to be sought at a subsequent operation, if it seemed advisable. This plan avoided the danger of infecting the general peritoneal cavity by breaking down the wall of lymph which had closed it off; but, on the other hand, had the disadvantage of being an incomplete operation, leaving the patient subject to future abscess formation and sometimes with a troublesome fistula.

In his late service of four months at the Massachusetts General Hospital he had had three such fistulous cases which had been cured by removal of the perforated appendix.

In this recent hospital service he had adopted a more radical form of operation for these cases. He had been led to do this by the experience and advice of Dr. F. B. Harrington.

The adopted method of operating is to open the abdomen in the linea semilunaris, and to try to enter the peritoneal cavity first at a point above or to one side of the abscess where the intestines are not adherent. Before breaking through the wall of the abscess, the free peritoneal cavity is carefully walled off with sterile gauze. The coils of intestine making up the abscess wall are then separated, and the appendix sought and removed. Gauze drainage in the lower

<sup>1</sup> See page 429 of the Journal.

<sup>2</sup> See page 433 of the Journal.

part of the incision, with closure of the rest by sutures, completes the operation.

This operation seems applicable to all cases of localized abscess in the usual right iliac region. Sometimes, however, the suppuration is too extensive and the patient too sick to allow of this thorough procedure.

In illustration of this Dr. Cabot narrated a case of a young girl brought into his wards in the winter of 1895 after a fortnight's illness. The abdomen was hard and tense, especially on the right side. Under short anesthesia an opening was made into a very large pus cavity, extending from the right iliac region to high up under the liver. This afforded great relief, but the further history illustrated a rare complication in appendicitis; for after three weeks, when the patient was beginning to sit up, she was suddenly seized with severe dyspnea accompanied by the profuse expectoration of foul pus. The lower part of the right pleural cavity rapidly became flat to percussion and the patient became deeply cyanosed. An opening hastily made into the chest allowed the escape of much pus similar to that coughed up, and the vigorous use of oxygen inhalation prevented suffocation while the lung was clearing itself of pus. She eventually recovered, although later a second opening had to be made in the neighborhood of the appendix.

In two other recent cases Dr. Cabot reported opening appendix abscesses through the rectum. In both of these the position of the abscess low in the pelvis made its approach through the abdomen an unusually risky proceeding, while through the rectum dependent drainage was easily established by a tube introduced through the rectum. In both cases the appendix was subsequently removed.

These were the only cases in his last service in which the appendix was not removed at the time of first operation. The completed operation he has carried out in eight or ten cases of acute appendicitis with abscess, and the results have been uniformly good.

In regard to the incision for the removal of the appendix between attacks, Dr. Cabot thought Dr. McBurney's incision was theoretically the most perfect one that had been devised, and in a case where the appendix was not very adherent or did not extend to a very great distance from the seat of the incision was probably sufficient. Dr. Cabot had had some cases which had been so difficult to handle that he had had to enlarge the incision in order to remove them, and he thought that if he had met with one of those cases after making the McBurney incision he would have had to weaken the abdominal wall by a rather ragged opening; that most of his operations had been done through an incision in the *linea semilunaris*, where there is plenty of tough fibrous tissue which can be firmly united by buried stitches. Moreover, he had noticed that if the patient coughed or sneezed during the operation, the effect was to bring the incision tightly together instead of forcing it apart, so that there was no very great tendency to traction on the scar in this situation. He had never seen a hernia in a case thus operated and stitched up, and in the cases where more room had been desired, the lengthening of the incision did not weaken the scar. While he thought that the incision described by Dr. Warren an excellent way of getting more room when McBurney's incision was insufficient, it had the disadvantage

that it made a flap in the abdominal wall which always leaves a weaker line of cicatrix than a straight line.

DR. ELLIOT: I think that what Dr. Cabot refers to, and Dr. Warren, as attacking the disease from the inner side, going in to clean peritoneum before you attack the disease, is a very important advance if it is practical. My own idea of that point of view is that it is more theoretical than really practical. The typical case for this operation would be a post-cecal abscess with the appendix rolling in under the cecum and the whole abscess behind. Of course the point of the operation is to get out the concretions and the sloughing appendix in order to make a perfect cure. If the abscess is behind the cecum, an incision is made inside the tumor and gauze is packed about it so that it can be wholly walled off and operated on without infecting the peritoneal cavity. That is a very valuable procedure and I have done it several times with great satisfaction, but the conditions are not always so favorable. The appendicitis cases that seem to me the most difficult are those where the appendix is lying near the middle line at the pelvic brim. An abscess forms about it. That abscess is walled off by coils of small intestine coming up in every direction, and omentum coming down over all. The whole mass is glued together. If you make an abdominal opening in such a case near the middle line and try to surround that abscess, you come down on small intestine which is attached by mesentery toward the middle line. So that it is practically impossible to isolate the infected coils from the rest of the abdominal cavity.

The question will always arise in such a case whether it is advisable to separate the infected coils in order to get the appendix. Dr. Harrington's method does not seem to me to have solved the difficulty in these complicated cases. Therefore, I think that point of view, although theoretically correct, cannot be carried out in a great many severe cases. If you try to carry it out and operate with the idea in mind, the operation is usually more perfectly done, but I think the best cases in which to carry it out, and the only cases in which it can be done, are the cases where the abscess is near the cecum and has not involved the small intestine, but where you get a good clear chance to pack without interfering with other infected coils of intestine. My own idea in the severe cases is that the important thing is to find out at the start whether there is pus in the pelvis or not. If pus is present in the pelvis and is not taken care of, the patient almost always dies. If pus is found in the pelvis in the early stages, it can be dealt with. I have looked up my cases in 1884, '85 and '86, and I find I have taken out the appendix in all the cases but two. The cases where the appendix was not taken out were cases of chronically walled-off abscesses nearly ready to burst, where I did not think the question could arise of taking it out. I think it is undoubtedly a great advantage to get the appendix out if you can. Whatever method you employ, I think the question will always be the question of individuality in the cases; that you cannot lay down a rule that one must always take it out. If you always take out an appendix, you may very often regret having taken one out. I find also in looking over my cases that I have saved six cases of general purulent peritonitis. In such cases I always open in the median line as well as over the appendix, and



wash out the peritoneal cavity thoroughly. I sponge out, flush and wash out, and leave a glass drainage-tube in the pelvis and plenty of gauze round the appendix and round all the sloughing gangrenous parts. The glass tube in the pelvis will very often come out on the third day, even where there has been pus in the pelvis. Drainage of pus in the pelvis seems to act very favorably in those cases. I used to make a large opening and take out all the intestines, sponge with corrosive sublimate, go over the whole cavity with gauze; and every bad case I did, died, so I have abandoned wholly that very careful handling of all the intestines and cleansing. The best results I have got are from making a large opening over the appendix, getting it out, disinfecting with peroxide of hydrogen by pouring it in, wiping out later, washing out the peritoneal cavity with the drainage-tube in place, and then leaving the large opening packed with iodoform gauze. That has given me the best results in those severe cases. Leucocytosis is a symptom that has been spoken of with great confidence. One of the cases I have on my conscience in the last three years is a case I saw with Dr. Richardson in his service, with a very stout fat abdomen, where they told me there was no leucocytosis and the patient had a temperature of 100° and pulse about 110. We waited till the next day partly on that account. It is almost the only case I have waited for and lost. The next day he was operated on and found to be full of pus in spite of there being no special leucocytosis. Since then I have paid very little attention to leucocytosis.

Persistent sinuses may be due to two or three things — may be due to sloughing appendix left or to a concretion, not uncommonly to a silk ligature. I think it well to tie the appendix and all points in the infected cavity with animal tendon of some sort, because silk in those infected areas will always make a fistula if it is tied in the infected area, whereas animal tendon does not make any trouble. The operation between the attacks has interested me lately more than anything else in regard to appendicitis. I have been in the habit of examining appendices during all my laparotomies, and have found them more or less diseased, and have taken them out occasionally. Yesterday I was doing a hysterectomy and thought I would look at the appendix. I found the appendix about four inches long, with adhesions around the base which evidently narrowed its calibre. In the middle of the appendix was a concretion about as large as an ordinary lead pencil. I have seen these several times and taken the appendix out for them, and yet this patient had not complained of any symptoms, and I could not make up my mind to take the appendix out. I snipped the adhesions which allowed the calibre of the appendix to become its normal size, then I squeezed this large fecal concretion back into the cecum, and there were several smaller ones of the same sort which I squeezed back. I think it will be interesting to know, if in some of the cases of appendix colic, such as the man I showed here to-night who had a perfectly normal appendix, but suffered constant pain and at the operation the end was found filled with these concretions, whether pushing those concretions back would be a relief.

So far as incision in the semilunaris for chronic appendicitis goes, I have done that several times and found it difficult to reach the appendix when it was over toward the anterior superior spine without making

a much larger incision, also when it was down under the head of the cecum it took a long dissection. The linea semilunaris is one and a half inches from the position where you often have to dissect for it. I think that the linea semilunaris is the best tissue to open if possible, and in extending McBurney's incision or mine I always try to keep in the linea semilunaris if possible.

DR. CABOT: In speaking of making an incision over the peritoneal cavity, I did not mean to the middle line necessarily of the cake. In a cake of that sort the incision I should prefer would be to begin above the cake and after packing in around gradually prolong and come down over the cake. Under that plan my first incision is usually made over the point of greatest tenderness. Now I simply begin above, get into the peritoneal cavity and pack it off and then prolong the incision down over the cake and handle the cake directly.

DR. RICHARDSON: It is a year or two ago that I first saw Dr. Harrington operate by the method alluded to by Dr. Cabot. It seemed to me so excellent a method that I adopted it, and have used it ever since. There is a class of cases in which this method is of the greatest advantage. To that class belong those cases of localized abscess situated close to the spine of the ilium or to Poupart's ligament—cases in which it is feasible, by making the incision well toward the median line, to arrange successfully gauze barriers.

We do not differ much, it seems to me, in our ideas as to the technique of operations for appendicitis; though doubtless agreeing in point of fact, we do not express ourselves exactly alike. The cases which seem to me best treated by first opening the peritoneal cavity are those with a localized tumor which can be drained extra-peritoneally.

The good results in cases of localized abscess which are opened in direct contiguity with the general peritoneal cavity seems to me amazing, because one cannot but infect the peritoneum locally the moment the cavity is opened. Though such cases usually recover, it seems to me that the risk is an unnecessary and a heavy one.

When a purulent appendix is surrounded and confined by an adherent and thickened omentum, which itself is more or less infiltrated with pus, the whole making a single abscess cavity, or rather a circumscribed septic tumor, separation of the adhesions and removal of the appendix in the method described by Dr. Harrington seems a most rational procedure, and one most likely to be followed by immediate and permanent recovery.

On the other hand, cases of long-standing inflammation, with extensive thick-walled abscesses, are best treated by simple incision and drainage, without attempt to separate the appendix. In such extensive cases walling off seems impracticable, for you not only cannot tell where the appendix is, but you cannot make out the extent and depth of the abscess wall. Separation of adhesions without a general and fatal contamination seems in such cases almost impossible. Walling off by means of gauze cannot be done with that thoroughness which is essential for the success of this method. Statistics of a very large number of cases are necessary for us to form a clear idea of the feasibility of removing the appendix in every case. We ought to know, for instance, how frequently symptoms of appendicitis recur after simple drainage of the

abscess. I have been able, in several hundred cases, to find but four of this kind. The number of deaths in simple drainage of appendicular abscesses has been but one or two in all, the percentage being therefore extremely small.

The question of hernia following the operation seems of little importance in deciding between the methods of operating, for the hernia is quite as likely to occur after drainage as after removal of the appendix, for in all such cases drainage is necessary. If it should appear that hernia after simple drainage is very common, then it seems best to let the patient recover from the operation of simple drainage, and later to operate on the hernia and at the same time to remove the appendix, the wound being of course sewed up tight. I have recently operated upon a patient for ventral hernia, upon whom two operations have been performed for appendicular abscess—operations in which the abscess cavity was simply drained. In operating upon the hernia I removed at the same time the appendix.

Another point in connection with appendicitis which has been frequently and fully discussed, and upon which I should like new light, is the question when to operate in the acute stage and when not to operate. As Dr. Elliot has said in a previous discussion, there must be some rule, though not as yet formulated, by which we may be guided in not operating upon acute cases. That there is a group of symptoms which decide some of us against operation cannot be doubted. In my own experience almost every case in which I have advised against operation the patient has recovered. Many of them have had the great advantage of appendectomy in the interval, an operation practically without danger, and one followed by the most brilliant, immediate and remote results. Those observers who have seen large numbers of cases of appendicitis, and who have in many of them delayed operation, will, I think, bear me out in saying that such, almost without exception recover. If we have in the operation in the interval such a beautiful method of avoiding the dangers of acute appendicitis, and that without hernia, it seems to me that we now have additional reason for being more conservative in the acute stage. In many cases of appendicitis it can be predicted with the greatest certainty whether operation will be necessary or not. About fifty per cent. of the cases that I have seen in the last two years have recovered without operation.

With reference to the technique of the intercurent operation, I would say that McBurney's method seems to me by far the best. Without exception, I have been able to use the McBurney method of separating the muscular fibres in every case in which I have begun it. I am delighted with it, and I apply it in every instance. In one or two cases I have been obliged to enlarge the original incision; I agree with Dr. Elliot and Dr. Cabot that the enlargement does make the incision to a certain extent ragged. A ragged wound, however, is of no consequence. The greatest advantage of the McBurney method is that none of the fibres of the abdominal muscles are sacrificed. Where we usually make the incision in appendicitis the fibres of the external oblique are aponeurotic. In certain instances it is probably necessary to cut across the fibres of the internal oblique. I never do it, however, without regretting that I am obliged to weaken so firm and important a structure. As a rule, the incision through the external oblique can be made

any length without cutting it, but the fibres of the internal oblique and the transversalis, must in some instances be extensively sacrificed. In a very large number of cases the appendix can be found by simply separating the fibres of the external oblique and of the internal oblique and transversalis a very short distance. In the vast majority of cases of appendectomy in the interval it is possible to remove the appendix through an incision so short that only one deep stitch is required to close it. I have never seen any hernia or weakness of the scar by such operation. In many cases I have been able to remove the appendix through an incision not broader than my thumb nail. Not that there is any special advantage in so short an incision.

The treatment of the stump of the appendix in cases of acute appendicitis in which drainage is necessary is simply to tie with catgut, and not to attempt to cover the stump with peritoneum. In the operation in the interval the best plan seems to me to depress the stump of the appendix into the cecum and to sew the peritoneum over it by interrupted silk sutures. I always tie the appendix near the cecum with silk and amputate with the actual cautery. I long ago abandoned making a cuff on the appendix and inverting the peritoneum of the appendix itself. In a certain number of cases, owing to thickness of the stump, stiffness of the cecal wall, inaccessibility of the parts, or for some other reason, it is impossible to cover in the stump. In such cases I have dropped the pedicle back, uncovered, and recovery without complication has followed.

DR. WARREN: In regard to the question of hernia, the general impression in those cases I have seen is that hernia is not so frequent as we think. I think we can by after-treatment avoid the danger of hernia by taking a good deal of care. The cavity is drained and a few stitches put in. The cavity should be frequently dressed, it seems to me; the gauze drains should be removed the next day or on the second day, and diminished rapidly in size. The moment you see you have a clean, velvety-walled wound the edges should be brought together and in contact all over the surface, and you can get in many cases a union by "primary second" intention. That can be accomplished by using provisional stitches and bringing the surfaces of the wound firmly together. I think in that way cases that have been drained need not necessarily suffer from hernia. A word about the frequency of relapses in cases that have been operated upon and cases not operated upon. I am generally in the habit of telling a patient if he goes a certain length of time without relapse the chances are that his appendix has healed up. If you have a case which has suppurated and you have not taken out the appendix, the patient wants to know how long he has got to be careful. I am in the habit of saying if he escapes for three months he stands a good chance of not having relapse, and if six months he stands a better chance. I believe in those cases that go over a certain length of time the appendix has sloughed out or the perforation has permanently healed. In regard to ligatures in septic cases I use catgut in tying off the appendix.

#### REMOVAL OF THE UTERUS FOR CANCER OF THE CERVIX.

DR. BURRAGE: I have here a uterus with its ovaries and tubes that I removed this morning from a

woman fifty-six years old for cancer of the cervix. It is of interest because it illustrates a comparatively new radical method of operating for cancer of the uterus, which is similar to the operation for cancer of the breast. I refer to the operation that Dr. Clark, of the Johns Hopkins University, has written about. It consists in inserting bougies in the ureters and making a very free dissection of the pelvis by abdominal section. The specimen is also of interest from the well-marked line of demarcation which it shows between the diseased and the healthy tissue, beginning just above the internal os and extending down until it is lost at what was the cervix, which is almost entirely gone. I thought at the time of the operation that I had removed all the disease, which had extended onto the vagina behind and to the right, and into the tissues of the pelvic floor. The symptoms had lasted seven weeks and consisted of pain and flowing. Drs. Councilman and Mallory, who kindly examined the specimen, say they think there was some cancerous tissue left in the pelvic tissues. There were no enlarged glands in the pelvis, and I palpated carefully along the course of the vessels to detect any, because that is a part of the operation. The inserting the bougies in the ureters took about twenty minutes, and was done with cocaine, and the operation lasted about two hours. It is a case of large alveolar cancer. The use of the bougies facilitated the dissection of the ureters a great deal, there being no danger whatsoever of injuring them. It was constantly plain where they were, and it was possible to isolate them so that they were stretched as two cords across the sides of the pelvis. The ureters having vessels of their own, one may make a free dissection without danger of their sloughing.

DR. ELLIOT: I never found any special difficulty in dissecting the ureters or finding them, and I have been very doubtful whether it would be any easier to dissect them with the bougies in. Where they are in cancerous tissue, however, I should think there might be difficulty. I do not intend, however, to operate in cases where there is cancerous tissue around the ureters.

#### ACUTE INTUSSUSCEPTION IN A BOY OF SIX.

DR. WARREN: I would like to report a case of acute intussusception in a boy of six years. I was called by Dr. Rotch to see the case two weeks ago on Saturday. The boy had had an attack of sharp pain Saturday morning about seven o'clock. He had been fooling in his mother's sewing-room over a sewing-table, pulling the abdomen up and down over the edge of the table. It was thought that possibly might have started the intussusception. The pain began the next morning at seven or eight o'clock. There was a sharp attack of pain, collapse, weak pulse, subnormal temperature and vomiting. Morphine was administered, and the case seen by Dr. Rotch, with Dr. Reed (his physician) that evening. The boy was comfortable from morphine, the pulse slower and more normal. During the day he had passed some bloody fluid from the rectum. No tumor felt, but on examination a sausage-shaped tumor in the right hypochondrium. I operated about the nineteenth hour from the beginning of the pain. I felt that here was a boy in good condition, and early operation with our present technique authorized us to disregard the old methods of distending the bowel or injecting with enemata; and

so we did a laparotomy without trying any preliminary measures. I made an incision from above the umbilicus to two or three inches below, and then a T-shaped incision across the rectus at the level of the umbilicus over to the left side, pressed aside the bowels, found the intussusception, which was just at the splenic flexure, about six inches long; and holding the intussusceptum in one finger and manipulating the intussusciens so as to pull the intussusciens down and force up the fundus of the intussusception the intussusception was reduced. There was a little induration of the mesentery at one point, but not enough to make it apparent that there was any thrombosis. The boy made an uninterrupted recovery and the wound has healed by first intention and there have been no bad symptoms since.

#### THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

TENTH ANNUAL MEETING, ATLANTIC CITY, N. J.,  
JUNE 2 and 3, 1896.

FIRST DAY.

#### ADDRESS BY THE PRESIDENT.

DR. CLAUDIUS H. MASTIN, of Mobile, Ala., President of the Association, briefly reviewed its history since its organization in 1886. He stated that during the past ten years great advances have been made in the field of genito-urinary diseases. The various organs which are comprised in its domain have been studied and thoroughly investigated. Our knowledge of their pathology and the therapeutic required for their treatment have each been systematized. Our instruments of investigation have been improved and new ones have been invented; the technique of our operations has been simplified and perfected. The kidneys and the bladder, together with the organs of generation have been opened up and illuminated, the hidden recesses of the entire system have been exposed to the eye, so that no longer are we groping in the dark, but aided by all the means of modern research, our diagnosis of hitherto obscure troubles has been cleared of doubt. Some of the greatest minds of past ages have done much in the department of genito-urinary diseases, and through their investigations it has been recognized as of the greatest importance. The immortal John Hunter understood its bearing upon scientific medicine, and indelibly impressed his great name upon the very key-stone of modern pathology, the hard chancre. His researches in this line blazed out the pathway of our present knowledge of syphilis.

#### FIVE CASES OF RUPTURE OF THE URETHRA TREATED BY EXTERNAL URETHROTOMY AND SUTURE.

DR. A. T. CABOT, of Boston, read a paper with this title. He stated that the intractable nature of traumatic stricture of the urethra is so well known that no apology was required for a report of some cases in which an attempt was made by immediate suture of the ruptured urethra to furnish accurate coaptation of the divided ends of the canal, and by promoting rapid and smooth healing of the mucous membrane to avoid the formation of stricture. Hitherto, the latter has been regarded as an inevitable consequence of a urethral rupture, and while in the

fortunate cases of moderate severity the regular passage of a sound may keep the urethra permeable, neglect of this precaution may be expected to result in a rapid closure of the stricture. In other cases of greater severity the stricture shows a constant tendency to contract in spite of every effort to keep it open, and repeated operations are required to avert the serious consequences of a complete closure.

Dr. Cabot then reported five cases of traumatic rupture of the urethra which were treated by immediate external urethrotomy and suture. In all of the cases the immediate result of the operation was good. In three of them the opportunity was given for examination some years after any dilating instrument had been used: in two of these no stricture was found and instruments as large or even larger than were used immediately after the operation slipped past the point of rupture with perfect ease. In one case, while no interference with urination was noticed, a narrowing of the urethra was found; this narrow point, however, was not of a hard, cicatricial nature, but was so soft and yielding that without the least exercise of force it was rapidly dilated to a good size. The conclusions of the author were as follows:

(1) In every case of ruptured urethra, immediate perineal section, with suture of the urethra should be practised.

(2) By this procedure not only do we greatly lessen the danger of urine infiltration and abscess, but we also, in a large proportion of cases, may hope to prevent the formation of close intractable strictures.

(3) In the early operation, the search for the posterior end of the urethra is much easier than in the later. The hemorrhage from the branch of the artery of the bulb serves as a guide to that end of the canal.

Dr. J. WILLIAM WHITE, of Philadelphia, said that he fully concurred with Dr. Cabot in the general principles laid down in his paper. There is another class of cases, however, in which it is sometimes difficult to decide just what procedure to follow, namely, cases of slight injury in which there are practically no symptoms excepting a little hemorrhage and perhaps some perineal swelling. In a slight, partial rupture of this character, is the outlook from suturing any better than we could expect from the introduction and retention of a large-sized instrument, and careful urinary antisepsis?

Dr. JOHN P. BRYSON, of St. Louis, said he was entirely in accord with the statement made by Dr. Cabot, that an early operation is demanded in a case of traumatic rupture of the urethra. If it can be demonstrated that the lesion in the urethra is transverse or oblique, the indications are to open and suture it. In these cases we often have to deal with a semilunar laceration.

Dr. F. R. STURGIS, of New York, said that when the rupture is slight, the introduction of an instrument to keep the canal patent is often all that is necessary. When, on the contrary, the rupture is extensive, an operation is called for.

Dr. ABNER POST, of Boston, reported a case of ruptured urethra recently coming under his observation. In that case, the speaker said, the patient would have been better off had an immediate operation been performed and the urethra sutured.

Dr. GEORGE CHISMORE, of San Francisco, said that while he coincided with the views of the writer of the paper in every respect, yet it seemed to him

that we are a little premature in concluding that a rupture of the urethra, not sutured and left to the healing powers of nature alone, will invariably lead to a particularly intractable form of stricture. He reported a case in which he had an opportunity to examine the urethra of a patient who had sustained a traumatic rupture of the urethra ten years before, and who had had no instruments passed for many years. He found a stricture at the seat of the injury which yielded very readily, admitting, within two weeks, a No. 10 F.

Dr. BRYSON said that in the linear form of stricture, which is usually a simple band rising quite sharply from the urethral wall, dilatation will often produce good results and sometimes bring about a radical cure. A longitudinal tear may heal even without the use of a catheter, but in traumatic cases the rupture is usually transverse or oblique.

Dr. CABOT, in closing the discussion, said he agreed with the statement made by Dr. White that it is often difficult to decide whether a case requires immediate operation or whether milder measures will suffice. The feeling he has is, that if a case which does require early operation is not operated on, it usually does badly. An abscess results, together with a cicatricial stricture, which might have been avoided by immediate operation. The actual danger pertaining to such an operation is trivial: it is a much more serious matter if we leave a blood-clot or a tear in the mucous membrane. In case of doubt, therefore, it is well to operate. There are undoubtedly cases where the injury is so slight that we can treat them as indicated by Dr. White, but where there is inability to pass a catheter or a large swelling in the perineum, an operation is necessary. In the case related by Dr. Chismore, the good result was no doubt partly due to the fact that a perineal opening was made, thus preventing urinary infiltration.

#### REPORT OF TWO CASES OF URETHROTOMY WITH TRANSPLANTATION FOR URETHRAL STRICTURES,

by Dr. JOHN P. BRYSON, of St. Louis.

The history of the first case was as follows: J. F. was first seen by Dr. Bryson in December, 1891. He had an annular stricture of the urethra, the anterior face of which was situated five and one-half inches from the meatus. The stricture had its origin in a gonorrhea contracted eight years before. It was of the inflammatory variety, resilient, and had repeatedly resisted efforts at dilatation carried beyond No. 14 F. Being convinced that further palliative treatment was useless, the speaker said he opened the canal on December 22, 1891, and disclosed a stricture about one-quarter of an inch in breadth situated at the posterior part of the bulbous sinus, and lined by roughened and inflamed mucous membrane. There was no well-defined margin between the healthy and diseased tissues, the one gradually shading into the other. The membranous portion of the urethra was not much dilated, but was in a state of mild, chronic, purulent inflammation. The urgent request of the patient, who demanded a radical cure of the trouble, which had considerably undermined his health, led Dr. Bryson to disregard the extra risk caused by the posterior urethritis and at once to dissect out the whole of the diseased tissue, going well beyond it on either side, in order to be sure of the mucous membrane. When the dissection was complete, it was

seen that the divided ends of the urethra were separated fully three-quarters of an inch and an attempt to bring them together failed. The base of the wound being composed of spongy and vascular tissue, immediate transplantation of a graft taken from the lining membrane of the prepuce was ventured. This was stitched to the cut ends of the urethra by interrupted catgut sutures. The urethra and bladder were thoroughly irrigated with warm carbolic solution, a catheter passing the full length of the urethra was tied in and the perineal wound propped open with iodoform gauze, loosely placed. On December 24th the gauze was removed; two days later the catheter was removed, and on inspection it was found that the graft had taken. The catheter was left out. The patient passed his urine chiefly through the perineal incision. The patient left the hospital on January 6, 1892, at which time the perineal wound had almost closed. He came under observation again in March, 1894, complaining of a free urethral discharge; after this was cured, a No. 30 F. sound would enter the bladder easily, almost painlessly, and caused no bleeding. On December 26, 1894, the patient reported that he had no further trouble and was able to urinate with a full stream. He was again heard from in the fall of 1895, when he wrote that he had remained perfectly well since the operation, urinating with a full stream and at normal intervals, having had no treatment in the interim.

In the second case reported by Dr. Bryson, several attempts at transplantation were made before a successful graft was introduced.

#### GOOD RESULTS FOLLOWING URETHRAL RESECTION.

DR. EUGENE FULLER, of New York, read a paper on this subject. He stated that during the past year he had encountered two cases in which, owing to the extensive destruction of the urethral canal, he had originally expected to be obliged to establish an artificial route (either perineal or hypogastric) in order to ensure a satisfactory and permanent outlet for the vesical contents. In both of these cases, however, by resorting to a very radical and extensive excision of the diseased urethral areas, he was able to restore the normal urinary function and to leave the urethral canals apparently permanently of good calibre. In one of the cases the excised tissue included the entire bulbous urethra, fully an inch of the penile urethra anterior to the bulb, and the anterior half-inch of the membranous urethra. In the other case an inch and three-quarters of the urethra was removed. In this second case the tissue removed included the bulbous urethra and the anterior portion of the membranous urethra. The first case was operated on about a year ago, and has been under observation ever since. Although the urethra is somewhat tortuous, it admits freely an 18 A. and shows no special tendency to contract. The second case, which was done about ten months ago, admitted a No. 17 A. easily four months after the operation; since that time, Dr. Fuller said, he has not had an opportunity personally to examine the patient, although he has heard from him that he is all right and in no apparent need of surgical attention.

DR. WHITE said that in one case of injury to the urethra coming under his observation, a considerable portion of the urethral wall was missing; to fill this gap he used a graft taken from the mucous membrane

on the inside of the cheek. He was unable to say whether the graft took successfully or not, the case did well, however, and he was disposed to think that the transplantation was a factor in bringing about the good result.

DR. BRYSON expressed the opinion that in the cases reported by Dr. Fuller — particularly in the last one — the time that has elapsed since the operation is too short to enable him to pronounce them permanently cured. In a case of that character, where an extensive resection is done, it would no doubt take a considerable period of time for the urinary canal to fill up.

DR. CHISHMORE expressed the view that the result of grafts within the urethra must be very uncertain.

DRS. FULLER and BRYSON then closed the discussion.

#### MOVABLE KIDNEY: ITS FREQUENCY, ITS CAUSAL RELATION TO CERTAIN DEFINITE SYMPTOMS, THE MEASURE OF RELIEF AFFORDED BY NEPHRORRHAPHY, A NEW METHOD OF APPLYING SUTURES IN THE OPERATION.

DR. FRANCIS S. WATSON, of Boston, read a paper with this title. He stated that the importance of this subject is not sufficiently recognized in this country, in spite of a large mass of reliable data which is at the disposal of the profession. Movable kidney is regarded by many intelligent surgeons as a fad; by others as merely one manifestation of hysteria. Eminent pathologists continue to assert its great rarity, and mention of successful nephrorrhaphies is met with a shrug of the shoulder. The reasons for these doubts are probably as follows: The pathologist rarely finds movable kidney because, in the first place, he rarely looks for it, and in the second place, as Newman and Kendal Franks have pointed out, with the body in the dorsal position the kidney naturally returns to its normal position and afterwards is retained there by the solidification of the perinephritic fat after death.

As regards the frequency of this condition, the following figures will prove of interest: Glenard, in 1893, reported that he had seen personally, between 1885 and 1893, 537 cases of movable kidney. Lindner, in 1888, asserted that one woman in every five was subject to movable kidney. Edebohls, in 1893, said that he had found 90 cases in a series of 500 women examined.

There are three symptoms of the dependence of which upon movable kidney all authorities agree. These are, in their order of frequency: (1) Pain in the loin or abdomen; (2) disturbances of digestion of the character of atonic dyspepsia; (3) neurasthenic or hysterical symptoms. There is one other which is not often mentioned, but which, when present, is the most characteristic of all, namely, the sickening pain, accompanied by a sense of nausea and faintness, which occurs when the kidney is grasped between the hands or the fingers and thumb. It is just as characteristic, so far as one may judge from the description of patients, as is the peculiar sensation which men feel when the testicle is squeezed.

An important point in connection with this condition is the occurrence, in a considerable number of cases, of hydronephrosis, which, beginning as intermittent, sometimes becomes permanent, and the original gravity of which is occasionally added to by infection from the lower part of the urinary tract, converting it into a pyonephrosis, with destruction of the organ.

Dr. Watson then briefly described his own method of suturing the kidney in the loin, which was as follows: After exposing the kidney by the usual lumbar incision, the fatty capsule covering the posterior surface of the organ is excised and its cut edges are stitched a little distance from the margins of the wound. Two stout chromicized catgut sutures are then passed through two-thirds of the entire length of the kidney, parallel to each other, and through the parenchyma of the organ, at a distance of half an inch from each other. They enter the kidney a little above its lower end and emerge a little below its upper end. Either end of the suture is then passed through the edge of the muscular layer of the wound. Two other sutures are then passed in a horizontal direction through the substance of the kidney, one above and the other below the points of entrance and of issue of the two first sutures, and their ends are also passed through the muscular borders of the lumbar wound. The fibrous capsule is now split throughout nearly the entire extent of the posterior surface of the organ, and reflected to a very slight extent towards either side, thus denuding the posterior border of the kidney to the breadth of the little finger. The sutures, instead of being tied in the ordinary way, that is to say, instead of one end being tied to the opposite end of the same suture, the end of one long suture is tied to the end of the other above and the same is done below at the points where they pass parallel to each other through the muscular layer. The same is done with the cross sutures. In this way the danger of the stitches tearing out is avoided. The kidney is drawn firmly into its place and maintained there by the sutures, being suspended as in a hammock.

DR. CHISMORE said that Dr. Watson's paper had made such an impression on him that he would pay more attention to the subject of movable kidney in the future. He has noticed that certain of his colleagues find this condition with remarkable frequency. He has one undoubted case of floating kidney under his observation at present, where the condition was discovered by accident; as it has given rise to no marked symptoms, nothing has been done regarding it.

DR. CABOT said he has operated on quite a number of cases of movable kidney which have given rise to symptoms in different degrees. In some cases the condition gives rise to nervous symptoms, in others to digestive disturbances, and in a third class it causes kidney colic. In the digestive and still more in the latter class of cases the most favorable results were obtained by operative interference. In his later operations he has adopted the method originated by Guyon, which seems to work very well.

DR. WHITE said he was quite well satisfied that movable kidney exists far more frequently than many suppose; he was equally well satisfied that too many movable kidneys were being found and operated on to-day. He has never seen a death result from the operation, and he has never failed to get at least temporary relief. The diagnosis usually rests between movable kidney and tumor of the gall-bladder, or some other intra-abdominal condition. One of the symptoms to aid us in making a diagnosis of movable kidney is the variation in the quantity of urine passed, due to torsion of the ureter; we may get a history of diminution in the amount passed, followed by a sudden increase and a relief of the symptoms. The symptoms mentioned in most of the text-books, namely, percus-

sion over the loin, he regarded of very little importance. The speaker expressed the opinion that most of the symptoms accompanying movable kidney are directly due to the condition itself, and are not of a hysterical character. The traction on the duodenum would account for the gastric phenomena; the obstruction to the outflow of urine would account for the renal symptoms and the traction on the nerves would account for the nervous manifestations.

DR. FULLER called attention to the fact that in cases where the capsule of the kidney is incised, a plastic lymph is thrown out which becomes firm and holds the organ in place.

DR. BRYSON said that an important reason for operating in these cases is the danger of suppurative lesions. In four cases where he opened the kidney for the purpose of draining a suppurating pelvis he found the organ much lower down than it should have been. The speaker said he agreed perfectly with Dr. Watson regarding the characteristic pain produced by compressing the kidney. As regards the proper location of the organ, he has obtained the best results by fixing it in a position where the ureter is neither stretched, nor sufficiently relaxed to become kinked.

#### POST-CONCEPTIONAL SYPHILIS.<sup>1</sup>

DR. ABNER POST, of Boston, read a paper on this subject. He stated that regarding the possibility of intra-uterine infection of syphilis two opinions prevail, one party affirming and another denying its existence, while a third party may be said to consist of those who admit its possibility up to a certain period of pregnancy, and deny its possibility after a date which is set at various periods by different writers. Those who deny the possibility of such transmission rest their belief upon the well-known relationship between mother and fetus, which does not permit the direct interchange of blood-corpuscles, and upon the probable fact that the contagium of syphilis is carried only by the blood-corpuscles and not by the serum, so that theoretically the transmission of the disease through the placenta is impossible.

The problem of infection of the fetus during intra-uterine life simplifies itself into the question whether pathogenic microbes may be transferred from the mother to the fetus or not. So far as analogy is concerned different conclusions have been reached by different investigators. The latest opinion on this subject is to the effect that the microbes of pneumonia and typhoid fever and also the bacterium coli commune pass the placenta and attack the fetus *in utero*. We are justified in saying that the microbes of certain diseases pass the placenta to infect the fetus, and hence we may infer that intra-uterine infection is not impossible in syphilis.

To establish the fact that the mother has acquired syphilis during pregnancy and transmitted it to her fetus, Taylor, in the recent edition of his work, lays down a series of propositions which must be proven before the fact of such transmission can be accepted: (1) It must be shown that the father was free from syphilis at the time of conception. (2) The infection of the mother during pregnancy and her freedom from the disease previously must be proven beyond doubt. (3) The child must have unmistakable lesions acquired without doubt before birth.

<sup>1</sup> See page 77, No. 4, of the Journal.



Dr. Post reported several cases illustrating the various points under consideration.

DR. R. W. TAYLOR, of New York, said that Dr. Post, in his paper, assumes that syphilis is a bacterial disease, and while analogous evidence strongly points to such an etiology, yet true, scientific evidence to that effect is lacking. The placenta, as a rule, is a good filter, preventing the transmission of the red blood-corpuscles, which seem to be the vehicles of the disease; but if this is so, why have the microbes of syphilis not been found in them? Women who are infected with syphilis during the first few weeks of pregnancy, usually give birth, towards the end of the fourth or fifth month or perhaps later, to a macerated fetus. When the infection occurs after the fourth or fifth month they may give birth to either a macerated fetus or a puny, miserable child, which at birth shows no evidence of the disease. Admitting that syphilis is due to a microbe which resides in the red blood-corpuscles and is prevented from coming in contact with the fetus by the placenta, there is nothing to prevent the constant interchange of serum between mother and fetus, and this carries with it the toxins of the disease. In the case reported by Dr. Post it is a matter of regret that he did not give the father a thorough examination to prove the truth of his statements. Assuming that the father's story was true and that this was a reliable case of post-conceptual syphilis, it is probably to be attributed to the fact that the placenta of that mother was not competent: that in the utero-placental circulation, owing to a rupture or thrombosis or some other lesion, there was an interchange of red blood-corpuscles and true syphilitic infection of the fetus.

DR. P. A. MORROW, of New York, said he has always accepted the theory that syphilis of the mother, acquired after conception, may be communicated to the fetus, and also that the disease may be communicated to the mother by a syphilitic fetus. He has observed a number of cases where the wife was inoculated during pregnancy by a syphilitic husband who had contracted the disease after procreation, resulting in an offspring with unmistakable evidences of syphilis. The theory that the placenta acts as an absolute filter, preventing contact of the syphilitic virus with the fetus, does not, in his opinion, rest on sufficient evidence. He believed that almost all authorities at the present day recognized that the mother may receive infection from a syphilitic fetus, and that the mother, healthy at the date of conception, may afterwards contract syphilis and communicate it to her child *in utero*.

DR. WHITE said there can be no doubt that the placenta acts as a filter. This has been shown experimentally in animals. The speaker expressed the opinion that while the fetus may be influenced by the toxins of syphilis, even to the point of death, he did not credit the theory that syphilitic manifestations in such a child after birth were due to the toxins alone, the placenta having acted as a competent barrier against the invasion of the bacteria themselves. One reason which may account for the rarity of post-conceptual syphilis probably is that the child, under these circumstances, must undergo a species of vaccination.

DR. STURGIS said it is by no means certain that a bacteria is the etiological factor of syphilis, nor has he ever been able to accept the theory that the placenta

acts in the capacity of a filter. It is well known that certain diseases can be transmitted by the mother to the child *in utero*, which compels us to admit that if the placenta does act as a filter, it is a pretty poor filter, after all. Cases of syphilis have been reported where the mother was infected as late as the eighth month, and he expressed the opinion that many similar cases escaped notice for the simple reason that it is exceedingly difficult to get an accurate history of such cases. In a pregnant woman the primary lesion is apt to escape notice or may be attributed to some irritation.

DR. POST, in closing the discussion, said that to make a plea for closer observation in these cases was one of the chief objects of his paper.

(To be continued.)

### Recent Literature.

*A Text-Book of Bacteriology.* By GEORGE M. STERNBERG, M.D., LL.D. New York: William Wood & Co. 1896.

Believing that the size and expense of his "Manual of Bacteriology," published in 1892, might restrict its usefulness among students of medicine and of biology, the author has issued under the above title practically a second edition of his well-known work, from which he has eliminated the detailed descriptions of non-pathogenic bacteria and the extensive bibliography contained in the Manual. The resulting volume of 698 pages, although nearly 200 pages smaller than its predecessor, still forms a large and handsome book.

Inasmuch as the arrangement of the subject-matter remains the same as in his Manual, and the text has been only so far changed in places as to keep it fully abreast of the most recent advances in the science of bacteriology, no detailed account of the work is necessary. It remains unquestionably the best book in the English language on the subject of which it treats. It is particularly useful on account of its completeness as a book of reference when some unusual form of bacterium has to be identified. Curiously enough, however, the subject of actinomycosis is omitted both from the Text-book and from the Manual, although the actinomycetes is included by Günther in his list of the thirty most important pathogenic bacteria. To be sure, the classification of actinomycetes has not yet been positively determined, but so long as the most recent authorities agree that it belongs to the plasmorphic bacteria, it would seem that this very important organism should be included in so extensive a work as this. It was also noted that the index contained no reference to Löffler's blood-serum mixture described in the chapter on the Bacteria in Diphtheria.

In conclusion, we should say for the benefit of those to whom the work is unknown, that it is very tastefully bound, is well printed on good paper, and contains numerous excellent illustrations.

FAITH CURE AT SCRANTON. — The father of a boy who recently died of diphtheria in Scranton, Pa., under treatment by Christian Science, has been held by the coroner for criminal neglect, together with two other faith-curers who assisted in the treatment of the case.

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### ON THE TREATMENT OF HEMOPTYSIS.

SKREINKA, of Roznau-Morant, Russia, as the result of a very large experience in the treatment of pulmonary tuberculosis, offers the following therapeutic suggestions for the various forms of hemoptysis.

A first variety of pulmonary hemorrhage is that which comes on at the onset of a bacillary lesion of the apex, and is simply due to efforts of coughing. It is characterized by sputa slightly tinged with blood. It is met with in patients whose bronchial secretion is so viscous as to be with difficulty expectorated. The violent fits of coughing characteristic of these conditions cause rupture of the capillary vessels of the small bronchi, and consequent hemoptysis. The treatment employed in these cases is simple: codeia to allay the troublesome cough, and chloride of ammonium, ipecacuanha, tartrate of antimony, sodium bicarbonate, etc., to liquefy the viscous products of the bronchial secretion, and facilitate expectoration.

The initial hemoptysis of tuberculous infiltration of the lung constitutes one of the most frequent forms of pneumorrhagia. It is distinguished by its abundance, and bears no relation to the extent of lesions (often trifling) existing at this period. The measures to be enforced are rest in the horizontal posture, absolute quiet, the application of ice to the supra-clavicular fossa of the side affected, and to the precordial region if there is much excitement of the heart, and the administration every hour of sugar of lead and morphine (one grain of the former, one-twelfth grain of the latter). When the cough is violent from the onset it will be necessary to double the quantity of the morphine. Saline purgatives should be administered till abundant liquid stools are produced.

Skreinka has little faith in hypodermic injections of ergotin in the ordinary form of pulmonary hemorrhage. Small doses, he says, exercise scarcely any useful action, while large doses augment the arterial pressure and excite the heart, thus sensibly hindering the salu-

tary effect of the vaso-constriction which the ergot produces. Therefore, he reserves the hypodermics of ergotin for cases in which, after a temporary arrest of the bleeding, there supervenes anew a cough which cannot be arrested by morphine, and during which the patient expectorates black clots, the remains of an old hemorrhage, mixed with bright red blood. In presence of these symptoms which indicate danger of a fresh hemorrhage, he injects a large dose of ergotin which often exercises a favorable effect, and he continues the use of morphine. Thus treated, the hemoptysis generally ceases in three or four days. The patient may then be permitted to talk and to move about in bed. The seventh day he may sit up, still keeping his room, and on the tenth day he may go out, but he must be enjoined to walk slowly and make no exertion.

The abundant expectoration of blood which marks the onset of tuberculous infiltration of the lung is without fibrile reaction, and is not generally repeated, or at least, not soon repeated. It is not so with the hemoptysis coming on at more advanced stages of the affection. These later hemorrhages are less profuse but are soon repeated, so that the bleeding spells may continue without much interruption for two or three weeks. Lastly they are habitually accompanied with fever, which serves to differentiate them from the initial hemoptysis. The treatment of these late pulmonary hemorrhages is the same as that of the initial hemoptysis.

The bloody expectoration which is observed in the course of fibroid phthisis is characterized by the small quantity of blood raised, and the simultaneous expulsion of vitreous sputa which are not met with in the other forms of pneumorrhagia. These little hemoptyses, which of themselves present no gravity, are difficult to arrest by medicinal means. They are often repeated every day for several weeks and spontaneously disappear when the patient seeks a more favorable climate.

The hemoptysis due to cavities presents, according to the extent of the ulceration of the lung, three distinct varieties. When we have to do with cavities at the apex so small that physical examination is unable to discover them, the patient will raise almost without efforts of cough small black clots. In these cases, the harassing cough is wanting, and all the treatment necessary for the hemoptysis is to apply an ice-bag to the corresponding supra-clavicular fossa. The hemoptysis is speedily arrested, and in three days the patient is able to leave his room.

Cavities large enough to be detected by physical exploration give rise to hemorrhages resembling those that come from large bronchiectases. These hemoptyses supervene whenever there is retention of the products of secretion in a cavity or in the dilated bronchus. The expectorated blood is mixed with purulent sputa. The best means of preventing these hemorrhages is to ensure the regular and complete evacuation of the contents of the vomica, or bronchial

dilatations. To combat the hemorrhage when it exists, a few powders of acetate of lead and codeia may be given (one-third of a grain of codeia, one grain of acetate of lead).

Hemorrhages taking their rise in large vomicae sometimes take on a fulminant course and may rapidly produce death.

Hemoptyses coming from a lung of which the greater part is undergoing softening are equally formidable, although they do not generally have as rapid a course as the preceding variety.

In both of these two forms of hemoptysis it is necessary to act rapidly and energetically. As in these cases we generally have to do with patients already accustomed to opiates, we are obliged to administer morphine in large doses—one-third of a grain, at first every hour, then every two hours, till a marked sedation is produced. A large sinapium may be applied to the front of the chest, and an ice-bag to the affected side. Dry cups and vesicatories have been recommended. To immobilize that half of the thorax which corresponds to the lesion, long imbricated strips of diachylon may be applied. In desperate cases, we may resort to constriction of the limbs. We thus obtain in a certain number of cases cessation of the pulmonary hemorrhage which is replaced by black clots. This expectoration may last several weeks. During this time the patient should remain in bed, and be kept under the influence of narcotics.

#### CHARAKA SAMHITA.

THE last issue, Part XV, of this work is of especial interest, as portraying the teaching of the ancient Indian physicians as to the important matters of diet and hygiene. The instructions as to diet contain a good deal of counsel wise enough to have stood the test of time, and interesting for the quaint language in which it is set forth.

"There are eight considerations, says the illustrious son of Atri, bearing upon the ordinances about food and their exceptions. Of these there are special circumstances which become productive of results beneficial or harmful. They also contribute to each other's excellence. These, therefore, should be determined. Having understood them, one should seek one's own good. One should not, through heedlessness or error, indulge in such articles of food, or such practices, which, though agreeable, are baneful or productive of evil consequences afterwards."

We hope the ancient Indians were more faithful in following such advice than are the modern dyspeptics.

The following selections from the advice in regard to food would in the main be held sound doctrine to-day:

"Food that is warm, oily, and according to the proper measure should be taken. It should also be taken after that previously taken has been properly digested. It should also consist of such ingredients as would not form a compound of hostile potencies.

"One should take one's food in a place that is agreeable.

"The food one takes should again, consist of dishes every one of which is agreeable.

"One should eat not with haste, or taking up a long time, or talking or laughing the while.

"While eating, one should eat with attention concentrated thereon.

"Lastly, one should eat after a proper survey of one's self."

Warm food is advised because while being taken, it "causes perspiration, assists the digestive fires, is soon digested, causes the wind to move in its natural directions, and drives out the phlegm." Oily food possesses all the above virtues, and in addition "generates growth of strength and excellence of complexion."

Food taken according to the proper measure "is easily transformed into feces and passes into the anal canal. . . . It does not injure the digestive fire. It is digested without difficulty.

"Of the person that eats before the food previously taken has been properly digested, the juice, still undeveloped, of the food previously taken, mingling with the juice of the food taken subsequently, very soon excites all the faults (wind, bile and phlegm).

"Of the person that eats after the food previously taken has been properly digested, it is seen that the faults being in their respective places, the digestive fire being inflamed, the appetite being excited, the mouths of the ducts being opened, the eructations being pure, the action of the heart being unobstructed, the wind moving in natural directions, the urgings of wind, urine, and stools being satisfied, the food that is taken, without injuring any of the constituent elements of the body, increases the period of life in every case.

"For these reasons," and they certainly are cogent enough, "one should eat after the food previously taken has been digested.

"Of one that eats too quickly, the food taken comes upwards, causes a cheerlessness, and does not reach the proper receptacle. Besides, the faults and merits of the food are not (in the case of one that eats too quickly) always perceived. . . .

"One that eats too slowly never feels gratification. Such a person eats much. His food also becomes cold. The digestion of such a man is never equable. . . .

"In the case of one that eats, talking or laughing the while, or without concentrated attention, the same baneful results happen that have been declared in the case of him that eats too quickly. . . .

"One should eat after an adequate survey of one's self; (noting that) this is suitable to me, and this not so. Verily, what is suitable to one's constitution is known to one's self."

The evils attending the taking of food in improper measure are vividly described, the results of starvation and gluttony being accurately portrayed; and then follows a sentence which shows how well the son of Atri understood what we now call nervous dyspepsia: "That food and drink also which are taken

with a mind burning with lust and wrath, and cupidity and distraction, and envy, and shame, and grief, and avarice, and anxiety, and fear, lead to similar disorders born of indigestion.

"Again, of all disorders born of undigested food, the alleviation happens only through abstention from food.

"In the conquest of all diseases, physicians possessed of skill desire such medicines as are contrary both to the original cause, and also the symptoms, or contrary to either of them."

The next chapter, which is devoted to plague and epidemics, the destruction of towns and large villages, we must reserve for a later number of the JOURNAL.

#### MEDICAL NOTES.

**A GERMAN OPHTHALMOLOGIST ATTENDS QUEEN VICTORIA.**—Professor Pagenstecker, a distinguished German ophthalmologist, has been called to attend Queen Victoria.

**DR. B. MEADE BOLTON**, chief of the department of pathology and bacteriology of the Philadelphia Board of Health, has been tendered the chair of bacteriology in the University of Missouri.

**VACCINATION IN AFGHANISTAN.**—The Amir of Afghanistan, acting on the advice of his physician, Miss Hamilton, has adopted compulsory vaccination in his dominions.

**THE BENDER HYGIENIC LABORATORY OF ALBANY MEDICAL COLLEGE.**—The New Bender Hygienic Laboratory of the Albany Medical College was dedicated on Tuesday evening, October 27th, with appropriate exercises, including an address by Prof. W. Jacobi, M.D., of New York.

**THE SEMI-CENTENNIAL OF ANESTHESIA.**—*Harper's Weekly* for October 17th contained an interesting article on the Semi-Centennial of Anesthesia, by Henry Smith Williams, M.D., illustrated by engravings of the Massachusetts Hospital, photographs of Drs. Morton and Warren, and a reproduction of the scene of the first operation under ether.

**BUBONIC PLAGUE IN BOMBAY.**—Ninety-seven fresh cases of bubonic plague have occurred in Bombay since the 2d inst., and there have been seventy-six deaths. M. Haffkine has been deputed to make an investigation into the nature of the disease and to report to the government of India. Quarantine has been declared at Aden and at Egyptian ports.

**NYMPHOMANIA CURED BY HYSTERECTOMY.**—James E. Moore, M.D., Professor of Clinical Surgery in the University of Minnesota, reports in the *American Journal of Obstetrics*, a case of nymphomania in a patient twenty-six years of age, which was cured by the removal of both ovaries and the uterus. The uterus was double, there being two distinct cavities of about the normal size with one Fallopian tube leading into each. In addition to nymphomania, dysmenorrhea and severe menorrhagia were symptoms in this case.

**RESIGNS FROM THE ARMY.**—Dr. John B. Hamilton, Surgeon of the United States Marine-Hospital Service, stationed in Chicago, has sent in his resignation to President Cleveland. Some time ago Dr. Hamilton, who is editor of the *Journal of the American Medical Association*, was ordered to the Marine Hospital at San Francisco by the War Department. He objected to being transferred, and made an official protest. This protest was overruled.

**TRANSPORTATION TO THE PAN-AMERICAN MEDICAL CONGRESS.**—The Committee on Transportation for the Pan-American Medical Congress, to be held in the City of Mexico, November 16 to 19, 1896, wish to announce that the special rates for the round trip leaving Boston on the evening of November 8th by the Sound Route, will be \$84.50. By the all-rail route, leaving at 12, midnight, on the same date, the fare will be \$88.50. This sum does not include sleeping and parlor-car fares or meals. Further information will be furnished to those desiring it by Dr. Walter H. White, 222 Marlborough Street, Boston, member of the Auxiliary Committee on Transportation.

**THE "LANCET" ON THE SEMI-CENTENNIAL OF ANESTHESIA.**—In closing an article on the Jubilee of Anesthesia, the editor of the *Lancet* says: "From the results of fifty years, surely it may be said that we know very much more now than we did then, that our apparatus is more perfect, our discrimination more keen, and our appreciation of the particular requirements of particular cases more thorough. As Englishmen, next year will prove even a greater anniversary for us to commemorate—that of the first use of chloroform; but on this occasion we readily join hands with our transatlantic *confères* and award to America the palm of having first made public proof of the possibility of general anesthesia. In any case we may rejoice that the words which proclaimed the success of that memorable trial in the clinic of Warren were uttered in the English language."

**THE EFFICIENCY OF ANTITOXIN.**—The following extract from the *Sanitary Record* of October 16, 1896, adds further testimony of a convincing character, with reference to the efficiency of antitoxin in reducing the fatality from diphtheria when used in season: "A report has recently been issued of the past year's experience with the use, in Austria, of antitoxin in the treatment of diphtheria, which will go far to confirm the faith of believers in the employment of this remedy. It appears that out of the last 1,100 cases treated in this manner, 970 recovered; and that when the serum was injected within the first two days after the patient had begun to complain, it was found that the mortality amounted only to a little over six per cent. This certainly indicated a great advance in the successful application of the remedy; and it shows that the physicians employing it had greatly improved in their methods of applying it. It is further noted that the returns of 313 inoculations made with a view

to preventing those exposed to the risk of contagion from contracting the disease, showed that the seizures were limited to twenty individuals, all of whom suffered only from a mild attack, and none of whom died. These statistics ought to give increased confidence to practitioners in this country who may have felt any doubt as to the application and the efficiency of the antitoxin remedy."

#### BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—For the week ending at noon, October 28, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 92, scarlet fever 20, measles 50, typhoid fever 60.

**REMOVAL OF DR. HEATH.**—Mayor Quincy has removed Dr. A. B. Heath from the office of Commissioner of Public Institutions of the City of Boston, and has appointed Mr. E. C. Marshall, of Charlestown, as his successor.

**STRETCHERS FOR FIREMEN.**—The ladder trucks of the Boston Fire Department are to be equipped with stretchers for the easy moving of firemen who may be injured while on duty. The reason for such equipment is that accidents demanding prompt removal of the injured sometimes occur at fires before there has been time for the arrival of police or hospital ambulances.

**SUFFOLK DISTRICT MEDICAL SOCIETY, EXAMINATION OF CANDIDATES.**—The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet to examine candidates for admission to the Massachusetts Medical Society at 19 Boylston Place on Thursday, November 12, 1896, at 2 P. M. Candidates should make personal application to the Secretary, and present their medical diploma, or its equivalent, at least three days before the examination. For further particulars apply, from 2 to 3 P. M., to John Dane, M.D., Acting-Secretary, 29 Marlborough Street, Boston.

**DEATH AT THE AGE OF ONE HUNDRED AND NINE YEARS.**—Mrs. Andre Berube died at Fitchburg, Mass., on October 26th, at the age of one hundred and nine years. She was born at St. Andre, Quebec, in 1787, and was the oldest of twenty children. Her grandfathers, it is said, lived to be one hundred and five and one hundred and fifteen, and her oldest son is now living in Marlboro, Mass., at the age of eighty-seven.

#### NEW YORK.

**THE NEW BUILDINGS OF ST. LUKE'S HOSPITAL.**—The beautiful new buildings and chapel of St. Luke's Hospital, at West 113th Street and Morning-side Heights were consecrated on October 17th.

**DR. THOMAS H. MANLEY RECEIVES TWO APPOINTMENTS.**—Dr. Thomas H. Manley, who was one of the sufferers when the entire medical and surgical staff of the Harlem Hospital was removed by the Commissioners of Public Charities more than a

year ago, has been appointed visiting surgeon to the West Side German Dispensary. He has also been elected Professor of Surgery at the New York Clinical School of Medicine, which is connected with that institution.

**THE NEW PRIVATE HOSPITAL FOR CONTAGIOUS DISEASES.**—The plans for the new private hospital for contagious diseases, especially scarlet fever and diphtheria, to be located near the foot of East 16th Street, have been finally approved, and the buildings will be rapidly pushed to completion. It will be remembered that this much needed institution was first projected by Mrs. John W. Minturn, who herself contributed \$25,000 towards the proposed object. The estimates for the hospital call for \$112,000, and of this amount \$100,000 has already been raised. Dr. John W. Brannon is President, and Dr. T. Mitchell Prudden, Professor of Pathology in the College of Physicians and Surgeons, is Vice-President of the Board of Direction. The Board also includes Dr. A. H. Doty, Health Officer of the Port, President Wilson, of the Board of Health, and Dr. George B. Fowler, Health Commissioner, *ex-officio*, who represents the interests of the Board of Health.

**SYRIAN IMMIGRANTS HELD FOR OBSERVATION.**—On the steamer *Maasdam*, which arrived on October 24th from Rotterdam and Boulogne, there were among the passengers three Armenians and fifty Syrians whom Health Officer Doty decided to hold for observation for a few days on Hoffman Island. Dr. Doty gave out that there were two reasons for this detention. The first was, that, as far as he could ascertain, there is no provision for medical inspection at the port of Boulogne, where these passengers were shipped, and fourteen days had not elapsed from the time they left their homes, which were in a part of Russia where both small-pox and typhus fever are reported to be prevalent. The second reason was that the temperature of a number of these immigrants was abnormally high, although no specific disease has thus far declared itself. The rest of the steerage passengers on the *Maasdam*, who were shipped at Rotterdam, were allowed to land, as the medical inspection is thorough at the latter port.

**LECTURE BY DR. PAUL GIBIER.**—On October 24th Dr. Paul Gibier delivered at the New York Pasteur Institute, Central Park, West, a lecture, to which the members of the Medical Society of the County of New York and the New York County Medical Association had been invited, on "Serum-Therapy in Poisoning by the Venom of Snakes," which was illustrated with experiments in the laboratory of the institute. This was the first demonstration in this country of the discovery made by Dr. Calmette, of the Pasteur Institute at Lisle, France, who carried on experiments for several years in China before perfecting the process. For some months past he has been experimenting with human subjects, and has met with entire success, as the bite of the vipers

in some parts of France is said to be as fatal as that of the rattlesnake in this country. No experiments have as yet been made on human beings here. This new serum is a clear, light-brown fluid, and it appears to be one of the most powerful of all the antitoxins yet discovered. One dose cures. There is no exhilaration and it is followed by no evil after-effects. While there are several hundred varieties of venomous snakes, it is claimed that the serum acts as an antidote to the bite of any one of them. For a number of weeks Dr. Gibier has been experimenting with two large rattlesnakes and several young ones, and on the occasion of his public lecture at the Pasteur Institute he first inoculated a rabbit with a lethal dose of the rattlesnake venom without interfering with the course of the poison in the system. In less than twenty minutes the animal was dead. A second rabbit was inoculated with the same dose, and immediately afterward given an injection of the Calmette serum. It appeared to suffer a little at first, but soon entirely recovered. A third rabbit was then inoculated with the serum before receiving a similar dose of the snake poison, and in this instance the animal did not show the slightest sign of illness.

### Miscellany.

#### THE LATE SIR JOHN ERIC ERICHSEN.

A CORRESPONDENT of the *Lancet* gives the following amusing anecdote of the late Sir John Erichsen:

"The late Dr. Hugh McNicol of Dalmally, Argyllshire, told me of his having once met Erichsen. A serious fracture case occurred in a large hotel in the county and Dr. McNicol was called to it. When setting the limb an old gentleman came to him and said he would be glad to give any assistance required, as he, too, was a medical man. He was thanked by Dr. McNicol and asked to use extension, etc., and to all the local man's directions the old gentleman gave ready obedience. The fracture was set and an adjournment made to the smoking-room. 'I must thank you for your assistance, sir.' 'Not at all; I was glad to be able to help in the matter. I think the case will do well as the setting of the limb is perfect. That's my card. Dr. McNicol saw 'John Eric Erichsen' on the card, and he told me he never felt so helpless in regard to making a remark fitting for the occasion. 'I'm glad,' he said, 'the fracture is set properly, for I learned the method out of your own book.' There was good-humored laughter, and, as they say about other pleasing functions, a happy evening was spent. Within a few weeks of each other they are gone, McNicol regretted in his small sphere as was Erichsen in his larger."

#### THE ULTIMATE RESULTS IN EIGHTY-SIX CASES OF FIBROMATA OF THE UTERUS TREATED BY THE APOSTOLI METHOD.

At the Boston meeting of the American Electro-Therapeutic Association, Dr. G. Betton Massey reported 86 consecutive cases of uterine fibroids treated

by the Apostoli method, to the American Electro-Therapeutic Association at the annual meeting in Boston, September 28, 1896. After considerable correspondence and inquiry the ultimate results for those existing from two to eight years after cessation of treatment were ascertained in 75 cases, and were found to be as follows:

#### Anatomic and symptomatic cure:

(a) Destroyed piecemeal by electrolysis through cervix . . . . .	1
(b) Extruded through cervix in whole or part . . . . .	4
(c) Disappeared under absorption . . . . .	12

#### Symptomatic cure:

(a) With great reduction in size . . . . .	16
(b) With slight reduction in size . . . . .	21
(c) Without change in size . . . . .	10

Total cases resulting in practical success, 64

Symptomatic improvement only . . . . . 4

Failure to effect any change . . . . . 6

Made worse . . . . . 1

Total cases resulting in failure to relieve, 11

The 64 successful cases give a percentage of 85.33 per cent. of successes, and the 11 cases of slight improvement and no improvement, and the one made worse, give a percentage of 14.66 per cent. of failures.

The one case that was made worse was a cystic intra-uterine growth that was improperly treated by electricity before it was generally known that such cases should not be treated by the classical Apostoli method. Future statistics will naturally be clear of such errors or practice, hence it may be said that the practical ultimate results in 100 cases properly treated by electricity will be at least 85 cases successfully and satisfactorily handled, and 15 cases in which electricity will do no good nor yet any harm, leaving the tumors unchanged for other methods promising greater relief.

Of the 12 tumors reported as having disappeared by absorption this fact was verified by the reader of the paper in but seven instances, the remainder being reported by the patients themselves.

#### CHILD LIFE-INSURANCE. WANTED—£2 15s.

THE following extract from an English paper is commended to the attention of enthusiastic advocates of child life-insurance, or as Mr. Atkinson tersely calls it, "child death-insurance." It shows one of the possibilities of a system which, unfortunately, appears to be a common occurrence in England.

At the Hastings County Bench, Edith Batt was charged with ill-treating Edwin Louis Batt. Mr. Hutton (barrister) prosecuted on behalf of the Society, and Mr. Stevens (barrister) defended.

"Die, you little —! I should like to have your insurance money for a spree." A neighbor, Ada Kemp, overheard the defendant addressing these words to the child. As she spoke she threw the child up and caught it again. Some few days later the same witness saw the child with a black eye, and following this its little arm appeared to be very much swollen. A week later and its right leg was hurt, so that it pained it to put its foot down. On another occasion she heard the woman saying, "I wish you would die; you are a misery to yourself and every one else." This little misery was then only fifteen months old. Mary Upton, a lodger in defendant's house, then gave evidence. The child was most cruelly treated; day after day it suffered at the hands of the defendant. She slapped and dashed it to the ground, until the child screamed and cried with pain. Twice she saw the woman hold the child by the clothes behind, and dash him face downwards. She had heard her



call the child "a little devil" and a "perfect nuisance." The cruelty was an every-day occurrence. Annie Sutton on two or three occasions saw the woman feeding the child in the most brutal manner. She put a teaspoon roughly down the child's throat, and said, "Here you are, you little beast, get that down your guts!" She had pushed bread and butter down the child's throat in the same way until it began to choke. Witness had seen the defendant several times slap the boy in the face while it was tied in a chair until blood flowed from the mouth. Other evidence was given, which confirmed the defendant's cruelty and spite for the child. Day after day she seemed pleased to call it names and throw it about until it was covered with bruises. At length, in March last, the little miserable life came to an end, after an existence of a year and five months. Frank Benjamin Lewis, a surgeon, was sent for to see the child, which he found dead.

Dr. Harvey made a post-mortem examination, and found four bruises on the left cheek, two bruises on the right forehead, a bruise in the middle of the back, and several bruises on the lower part of the abdomen, two large bruises on the buttock, and bruises on each knee. The child died from meningitis, caused by a blow on the skull, there being an injury on both sides of the skull, that on the left side being more serious. In his opinion the child had not been sufficiently fed. Mr. T. P. Harvey, M.D., who assisted at the post-mortem, corroborated. The child's life was insured in the Pearl Life Assurance Society for 1d. a week. £2 15s. was due at its death.

### ZEAL.<sup>1</sup>

IN 1880 a French medical graduate, named Fort, established himself at Rio de Janeiro, where he soon acquired a great reputation as a skilful surgeon, thereby somewhat arousing the jealousy of the local practitioners. Returning to Paris after some years of expatriation he published his impressions of the Brazilian capital, making particular mention of the defective system of instruction in operation at the School of Medicine, and animadverting with much severity on the extreme lack of zeal manifested by the students. A few months ago Dr. Fort again visited Rio de Janeiro, but had it not been for the intervention of the French Ambassador the reception he was accorded by his former colleagues and their pupils might well have been attended by serious consequences. The following description of the *fracas* is furnished by a local paper:

"At midday Ouvidor Street was blocked by upwards of five hundred students crying with one voice, 'Death to Fort!' Dividing into groups they then proceeded to the various newspaper offices in the town demanding the coöperation of the press in punishing the base maligner who, in their persons, had dared to insult the whole of Brazil and its inhabitants. After this they searched the hotels for their victim in order to lynch him, but happily Dr. Fort was absent from the city that day. Thus foiled they organized an execution in effigy with a funeral procession, the starting-point of which was at the Medical Faculty. Upwards of a thousand students accordingly emerged from the Faculty the next morning in regular order, each individual carrying in his hand a lighted taper, while at the head of the column there was a catafalque with a coffin containing the effigy. On either side robed students bearing extra large candles marched as pallbearers, and scattered along the line was a plentiful display of banners decorated with asses' heads and other uncomplimentary allusions to Brazil's calumnia-

tor. So realistic was the whole scene that prayers for the dead were chanted while the procession was *en route*, and when the final act of cremation took place in San Francisco Square it was accompanied by the solemn strains of 'De Profundis.'"

By a later account we learn that Dr. Fort "was able to embark on the *La Plata* safe and sound," and also convinced, we should think, that Brazilian medical students have still some zeal left.

## Correspondence.

### ANESTHESIA: A LETTER FROM RT. REV. MONSIGNOR DOANE.

NEWARK, N. J., October 21, 1896.

MR. EDITOR:—I have just read with the greatest interest the account published in your JOURNAL of the proceedings on the occasion of the fiftieth anniversary—the Golden Jubilee—of the first operation performed under the influence of ether. I have long since abandoned the profession of medicine, and devoted my life to another calling. As a pupil of Dr. Mütter, at the Jefferson Medical College in Philadelphia, I have seen, as Dr. Ashurst so well describes, all the major operations of surgery performed before the introduction of anesthesia; and what appalling sights and scenes they were! I also saw in the Massachusetts General Hospital one of the early operations under the influence of ether performed by Dr. Henry J. Bigelow.

My interest in medical and surgical matters continues unabated. I rejoice at all the new discoveries, as, for example, asepsis as described in the discoverer's, Sir Joseph Lister's, most interesting address as president before the recent meeting of the British Association at Liverpool. Perhaps the best evidence, however, is St. Michael's Hospital in this city, with its 285 beds, with the starting of which I had more or less to do.

You wisely waive the discussion as to who was the Columbus of ether. Was not a story told of a countryman shown the statue of the discoverer of ether on Boston Common, and asking which one, being answered, *either—ether?*


The poet of the occasion was an old friend and classmate of mine and his beautiful verses must have been made more effective by his delivery of them. The first stanza seems to have been inspired by the physician-poet whose death he deplored.

Very respectfully yours,

G. H. DOANE.

### METEOROLOGICAL RECORD

For the week ending October 17th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. •		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.		8.00 P. M.
S...11	30.40	48	52	44	74	80	77	N.	N.E.	12	24	O.	O.	1.03 .02 .44
M...12	30.12	48	51	46	79	79	69	N.E.	N.E.	36	32	O.	O.	
T...13	29.82	46	50	43	86	100	88	N.	N.	24	14	R.	R.	
W...14	29.69	50	53	46	86	83	89	N.	N.	9	8	O.	C.	
T...15	29.63	48	52	44	93	90	92	N.	N.E.	7	4	O.	C.	
F...16	29.66	56	67	44	79	63	70	W.	W.	10	12	C.	C.	
S...17	29.96	48	53	42	64	69	66	S.W.	N.E.	8	10	O.	C.	
														1.49

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

<sup>1</sup> The Lancet.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 17, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York . . .	1,892,332	636	227	10.05	13.05	3.30	2.25	2.55	
Chicago . . .	1,678,967	415	219	22.08	8.16	9.84	3.08	6.72	
Philadelphia . .	1,164,000	363	112	16.34	12.04	8.36	1.40	10.92	
Brooklyn . . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . . .	560,000	—	—	—	—	—	—	—	
Boston . . .	494,206	192	65	15.08	15.08	2.06	4.68	6.76	
Baltimore . . .	496,315	173	64	16.82	9.28	6.96	4.64	1.16	
Cincinnati . . .	386,000	—	—	—	—	—	—	—	
Cleveland . . .	314,537	81	34	17.22	6.15	1.23	1.33	11.07	
Washington . . .	275,500	116	35	18.06	12.04	3.44	8.60	4.30	
Pittsburg . . .	238,617	—	—	—	—	—	—	—	
Milwaukee . . .	275,000	—	—	—	—	—	—	—	
Nashville . . .	87,764	29	1	10.32	17.20	—	—	—	
Charleston . . .	65,165	43	14	9.32	9.32	—	—	—	
Portland . . .	40,000	—	—	—	—	—	—	—	
Worcester . . .	38,687	27	17	33.23	3.70	3.70	—	18.50	
Fall River . . .	38,020	46	26	15.19	6.51	10.85	—	4.24	
Lowell . . .	34,359	38	20	2.63	13.15	—	—	2.63	
Cambridge . . .	31,519	33	11	27.27	15.16	12.12	6.06	6.06	
Lynn . . .	62,365	—	—	—	—	—	—	—	
New Bedford . .	55,254	14	5	21.42	14.28	14.28	—	—	
Springfield . .	51,534	19	5	10.52	—	—	—	—	
Lawrence . . .	52,163	20	9	20.00	10.00	5.00	—	15.00	
Holyoke . . .	40,149	—	—	—	—	—	—	—	
Salem . . .	34,437	12	7	16.66	8.33	8.33	—	8.33	
Brookton . . .	33,167	8	0	25.00	25.00	—	25.00	—	
Haverhill . . .	30,185	19	6	21.04	10.52	5.26	—	10.52	
Malden . . .	29,709	11	2	—	9.09	—	—	—	
Chelsea . . .	31,295	9	3	—	—	—	—	—	
Fitchburg . . .	26,394	6	4	33.33	16.66	—	16.66	16.66	
Newton . . .	27,622	6	2	16.66	16.66	—	—	16.66	
Gloucester . . .	27,663	—	—	—	—	—	—	—	
Taunton . . .	27,093	12	4	—	25.00	—	—	—	
Waltham . . .	20,877	7	2	28.58	—	—	—	14.28	
Quincy . . .	20,712	4	2	—	—	—	—	—	
Pittsfield . . .	20,447	5	—	20.00	—	—	20.00	—	
Everett . . .	18,578	4	1	—	—	—	—	—	
Northampton . .	16,738	—	—	—	—	—	—	—	
Newburyport . .	14,564	6	0	—	—	—	—	—	
Amesbury . . .	10,920	—	—	—	—	—	—	—	

Deaths reported 2,417: under five years of age 915; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fever) 379, consumption 274, acute lung diseases 245, diphtheria and croup 137, diarrheal diseases 116, typhoid fever 80, whooping-cough 21, cerebro-spinal meningitis 9, scarlet fever 6, measles and malarial fevers 4 each, erysipelas 2.

From whooping-cough New York 7, Baltimore 5, Chicago and Cleveland 3 each, Boston, Cambridge and Springfield 1 each. From cerebro-spinal meningitis New York and Worcester 3 each, Washington 2, New Bedford 1. From scarlet fever Baltimore 2, New York, Chicago, Philadelphia and Boston 1 each. From measles New York 2, Chicago 1. From malarial fever Charleston 3, Philadelphia 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending October 10th, the death-rate was 16.7. Deaths reported, 3,477: diphtheria 82, diarrhea 80, scarlet fever 58, measles 57, fever 49, whooping-cough 35.

The death-rates ranged from 10.6 in Norwich to 21.5 in Manchester: Birmingham 18.6, Bradford 14.6, Croydon 11.5, Huddersfield 13.5, Hull 21.0, Leeds 17.1, Leicester 12.3, Liverpool 19.6, London 16.2, Newcastle-on-Tyne 17.9, Nottingham 16.3, Sheffield 18.8.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 17, 1896, TO OCTOBER 23, 1896.

Leave of absence for two months to take effect upon the completion of his duties with the 3d Artillery, is granted FIRST-LIEUT. CHARLES F. KIEFFER, assistant surgeon, Fort Crook, Neb.

The leave of absence on surgeon's certificate of disability granted FIRST-LIEUT. BENJAMIN BROOKE, assistant surgeon, is extended one month on surgeon's certificate of disability.

The extension of leave of absence on account of disability granted MAJOR CLARENCE EWAN, surgeon, is still further extended one month on account of disability.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 24, 1896.

M. S. ELLIOTT, assistant surgeon, ordered to Naval Laboratory and Department of Instruction, New York.

## OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING OCTOBER 17, 1896.

BAILHACHE, P. H., surgeon. Directed to report in this city for special temporary duty. October 3, 1896.

PURVIANCE, GEORGE, surgeon. Granted leave of absence for thirty days from October 6, 1896. October 7, 1896. Directed to report to chairman of Medical Board for physical examination. October 15, 1896.

CARTER, H. R., surgeon. Relieved from duty at Norfolk, Va., and directed to proceed to Chicago, Ill., and assume command of Service. October 15, 1896.

WHEELER, W. A., surgeon. Directed to proceed from Cincinnati to Gallipolis, O., as inspector. October 9, 1896.

CARMICHAEL, D. A., passed assistant surgeon. Directed to report to chairman of Board of Examiners for examination preliminary to promotion. September 26, 1896.

KALLOCH, P. C., passed assistant surgeon. Granted leave of absence for four days. October 1, 1896.

CARRINGTON, P. M., passed assistant surgeon. When relieved from temporary duty at Chicago, Ill., to rejoin his station at Evansville, Ind. October 15, 1896.

GUTTERAS, G. M., passed assistant surgeon. Granted leave of absence for thirty days from October 11, 1896. October 2, 1896.

WERTENBAKER, C. P., passed assistant surgeon. Granted leave of absence for seven days from October 12, 1896. October 6, 1896.

YOUNG, G. B., passed assistant surgeon. Detailed to represent Service at meeting of Tri-State Medical Association to be held in Memphis, Tenn., November 17 and 18, 1896. October 3, 1896.

THOMAS, A. R., assistant surgeon. Granted leave of absence for thirty days from October 5, 1896.

## BOARDS CONVENED.

Board to meet at Vineyard Haven, Mass., October 1, 1896, for the examination of Passed Assistant Surgeon D. A. CARMICHAEL, preliminary to promotion, Surgeon H. W. AUSTIN, Chairman; Surgeon C. E. BANKS, Recorder.

Board to meet in Philadelphia, Pa., October 19, 1896, for the physical examination of Surgeon GEORGE PURVIANCE: Surgeon P. H. BAILHACHE, Chairman; Surgeon C. E. BANKS, Recorder.

## SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, November 2d, at 8 p. m. Dr. J. Collins Warren will read a paper on "The Treatment of Acute Intussusception." Dr. T. M. Rotch and Dr. S. J. Mixer have been asked to take part in the discussion. Dr. E. A. Crockett on "Syphilis of the Ear."

JAMES G. MUMFORD, M.D., Secretary, 197 Beacon St.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION.—The first meeting of the year will be held at the Medical Library, 19 Boylston Place, on Wednesday evening, November 4th, at 8 o'clock.

Business: The election of a Chairman for the Section.

The following papers will be read:

- (1) "Gunshot-Wounds of the Kidney," by M. H. Richardson, M.D., and H. A. Lothrop, M.D. Drs. D. W. Cheever, A. T. Cabot, F. B. Harrington and F. S. Watson will discuss the paper.
- (2) "The Treatment of Disabled Joints resulting from the So-called Rheumatoid Diseases," by J. E. Goldthwait, M.D. Drs. F. C. Shattuck and E. H. Bradford will discuss the paper.

The presentation of pathological specimens of surgical interest is invited.

PAUL THEORNDIKE, M.D., Secretary, 244 Marlborough St.

THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.—The meeting of the Southern Section of the American Laryngological, Rhinological and Otolological Society will be held in New Orleans, March 3 and 4, 1897.

W. SCHEFFEGRELL, M.D., Chairman, Southern Section.

## RECENT DEATH.

FRANKLIN WILLIAMS PIERCE, M.D., M.M.S.S., formerly of Marston's Mills, died at Edgartown, October 19, 1896.

## Original Articles.

AN EXPERIMENTAL STUDY OF THE RESPIRATORY FUNCTIONS OF THE NOSE.<sup>1</sup>

BY J. L. GOODALE, M.D.,  
*Assistant Physician for Diseases of the Throat, Massachusetts General Hospital.*

PHYSIOLOGICALLY considered, the subject of nasal respiration resolves itself naturally into the following divisions:

I. The action of the nasal mucous membrane upon respired air with regard to heat and moisture.

II. The normal alterations in intra-nasal air-pressure during the respiratory act.

III. The normal route taken by respired air within the nose.

IV. Chemical changes effected in the air-current by the nasal mucous membrane.

Pathologically, the following conditions are comprehended:

I. Variations in the amount of heat and moisture imparted to inspired air in virtue of alterations in the intra-nasal structures, as in

(a) Hypertrophic rhinitis.

(b) Atrophic rhinitis.

II. (A) Abnormalities in intra-nasal air-pressure in virtue of:

(a) General narrowing of nasal passages, as in hypertrophic rhinitis.

(b) General widening, as in atrophic rhinitis.

(c) Anterior stenosis, as in collapse of alæ.

(d) Posterior stenosis, as in hypertrophy of pharyngeal tonsil.

(e) Unilateral stenosis, as in septal deviations.

(B) The secondary effect of these abnormal pressures upon the intra-nasal structures.

III. Variations in the route of respired air due to shape of

(a) Vestibule.

(b) Inferior and middle turbinate.

(c) Septum.

As will be presently shown, our knowledge of the preceding phenomena is in some directions incomplete from want of investigation, while in others it is in an unsettled state as a result of conflicting authority. In view of this unsatisfactory condition of affairs the writer was led to undertake an experimental study of the subject in connection with clinical observation. Owing to the extent of the field which such an investigation comprised, it appeared preferable to restrict consideration for the present to certain matters possessing a practical bearing, to the exclusion of others of more theoretical interest. We may thus leave out of account the subject of the chemical changes caused in the respired air by the nose, and also several of the matters tabulated in the list under Pathology.

# I. THE ACTION OF THE NASAL MUCOUS MEMBRANE UPON RESPIRED AIR WITH REGARD TO HEAT AND MOISTURE.

Expressed in other words, the attempt was made to ascertain the amount of work which the nasal mucous

membrane accomplishes under the following atmospheric conditions:

(a) Medium states of external air (temperature, 10°-15° Centigrade; relative humidity, 40 to 50 per cent.).

(b) Cold and dry air (T. 0°, R. H. less than 40%).

(c) Cold and damp air (T. 0°, R. H. greater than 85%).

(d) Warm and dry air (T. 20°-25°, R. H. less than 40%).

(e) Warm and moist air (T. 20°-25°, R. H. greater than 85%).

Under the preceding atmospheric conditions, thermometric and hygrometric tests were made of air which had been

(a) Passed through the nasal chambers alone.

(b) Inspired into the lungs and expired through the nose.

(c) Inspired through the nose and expired through the mouth.

(d) Inspired and expired through the mouth.

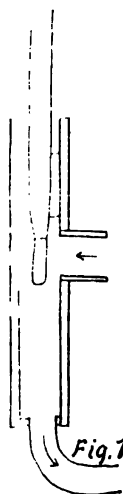
The effect of varying the respiratory rate and depth was also ascertained.

After considerable experimentation, an apparatus constructed on the principle of the aspiration-psychrometer was found to give the most uniform and accurate results.

This apparatus (Fig. 1) consists of a hard-rubber tube 8 cm. long and 1.5 cm. in diameter, provided with a lateral aperture into which a short piece of soft-rubber tubing is inserted. A delicate thermometer is placed within the tube, with its bulb opposite the lateral opening. At the lower end of the tube a short, curved piece of glass is fitted. The air of which the temperature is to be ascertained passes through the lateral opening, strikes the bulb, and leaves at the lower opening. For thermometric determinations, the bulb of the thermometer is, of course, clean and dry. For hygrometric tests, the bulb is covered with a very thin layer of absorbent cotton, and wet in pure water. Comparison between the readings of the dry and wet bulbs gives by reference to hygrometrical tables, the relative humidity of the air tested and the number of grains of aqueous vapor in a cubic metre.

While a similar apparatus with a dry-bulb thermometer has been used by several writers for thermometric observations of respired air, no one has hitherto, as far as the author is aware, employed it in conjunction with the wet bulb for hygrometrical purposes.

Certain precautions were found necessary in using this apparatus. In the first place, if a thermometer be placed in air of such a temperature and humidity as to possess a dew-point above the temperature of the thermometer, a deposit of moisture will take place upon the glass, and if the relative humidity of the air be less than 100 per cent. the reading of the mercury will be that of a wet bulb until the moisture on the glass has evaporated. In the case of the above apparatus, therefore, a source of considerable error may under similar conditions be introduced. To obviate this, the temperature of both tube and bulb was at the beginning of each test raised several degrees higher than the expected temperature to be obtained.



<sup>1</sup> Awarded the Boylston Medical Prize of Harvard University, 1896. Extract from announcement of the Board: "By an order adopted in 1895, the Secretary was directed to publish annually the following votes: (1) That the Board do not consider themselves as approving the doctrines contained in any of the dissertations to which premiums may be adjudged. (2) That in case of publication of a successful dissertation, the author be considered as bound to print the above vote in connection therewith."

A second important precaution is to prevent abstraction of heat from the expiratory current by the wall of the tube. The lateral tube is consequently very short, and the whole apparatus covered with flannel.

For our present purposes a comprehensive review of the literature relating to this subject seems neither necessary nor desirable. It appears preferable to present in tabular form the results attained by four recent investigators, Aschenbrandt, Kayser, Bloch in Germany, and Macdonald in England.

In the left-hand column the temperature of the external air is given and in the right that to which the air is raised in passing through the nose.

At -7° C.	Temperature rose to	29.8° C.	Macdonald.
-8°	"	24°	Bloch.
-4°	"	27.5°	Kayser.
1.7°	"	36°	Macdonald.
2°	"	26°	Bloch.
0°	"	27.5°	Kayser.
8-12°	"	30°	Aschenbrandt.
12°	"	38°	Macdonald.
12°	"	30°	Kayser.
12°	"	30°	Bloch.
19°	"	32.3°	Kayser.
18°	"	31°	Bloch.

From these figures it will be seen that the results obtained by the German investigators are very nearly in accord, and average three to six degrees lower than the figures of Macdonald.

In passing through the nose the humidity of the air was found by these authors to be raised to

Saturation point	Kayser.
"	Aschenbrandt.
"	Macdonald.
Two-thirds of saturation point	Bloch.

It does not appear that tests were made under varying conditions of atmospheric temperature and humidity, although it will readily be seen that the consideration of these two factors in their mutual relations is important. For instance, the saturation of air at 3° and of 50 per cent. relative humidity will involve the abstraction from the nasal mucous membrane of four times the amount of aqueous vapor required to saturate air at 27° and of 50 per cent. relative humidity. From the point of view of climatology the determination of the nasal respiratory functions under varying atmospheric conditions present problems of interest and importance.

In the writer's experiments with the psychrometer, the short lateral tube of the instrument, which conducts the air to the bulb of the thermometer, was adjusted to the mouth or to one of the nostrils, as the case required. In testing air expired through the mouth, the lateral tube was lengthened to ride over the back of the tongue, thereby approximating as closely as possible its orifice of entrance to the pharynx; thus avoiding alteration of the expiratory current by the oral cavity. It was, however, found by comparative trials that the interposition of this additional tubing did not produce results materially differing from those occurring in tests where the expiratory current passed out freely in contact with the walls of the mouth. Where tests are to be made of air inspired and expired through the nose, inspiration is performed as usual, but at each expiration the lateral tube is placed in one nostril and at the end of expiration is removed to permit free inspiration. For tests upon air which has traversed the nasal passages alone, a peculiar procedure is required. The lateral

tube of the psychrometer is fitted to one nostril and the bent tube running from the inferior opening is placed in the mouth. When now air is orally inspired through this lower tube, the soft palate becomes involuntarily elevated and so firmly pressed against the naso-pharyngeal vault as to completely cut off all communication between the mouth and the nose. To compensate for the rarefaction of air in the tube caused by the oral inspiration, air enters the free nostril, passes behind the septum into the nasal passage of the opposite side, thence into the apparatus and so into the mouth and lungs.<sup>2</sup> Thus the thermometer registers the temperature of air which has traversed the whole length of both nasal chambers.

Examination of these comparative tables leads to interesting and instructive conclusions. It seems advantageous to call attention first to the three groups of figures placed last in each table, namely, those denoting the changes occurring in air which has been (1) inspired through the nose and similarly expired, (2) inspired through the mouth and similarly expired, (3) inspired through the nose and expired through the mouth.

Among these three groups, the last, *nasal inspiration and oral expiration*, exhibits the greatest increase in the temperature and humidity of the expired air. Also the state of the air thus expired is practically unaffected by external atmospheric conditions, the ultimate temperature being from 34° to 35° and the absolute humidity being 36 to 37 grammes vapor per cubic metre, although the original temperature may have been at 1° or 25° and the original absolute humidity 1.2 grammes or 14.5 grammes vapor per cubic metre.

In the second place, it is evident that the inferiority exhibited by air which has been *orally* inspired and similarly expired, as compared with air *nasally* inspired and orally expired, is for temperature a very uniform inferiority, being about 1.5° irrespective of the original state of the atmosphere. For humidity this inferiority exhibits a definite variation dependent upon the atmospheric temperature, being in cold air (1°-5°) as much as five grammes vapor per cubic metre, while in warm air (21°-25°), it is but one gramme vapor per cubic metre.

Thirdly, we see that air inspired and expired through the nose, is, as compared with air inspired through the nose and expired through the mouth, slightly inferior in temperature and humidity, provided the atmosphere be warm (21°-25°). If, however, the atmosphere be cold, the difference is very marked, being four to five degrees for temperature and six to eight grammes vapor for absolute humidity. This difference must represent an actual loss, for otherwise the expiratory current would leave the nostrils in the same condition exhibited by it in passing upward past the pharynx, namely, at a temperature of 34° and in the possession of  $\frac{36}{100}$  grammes vapor per tidal current of 500 c. c. Since, however, each expiratory tide leaves the nostrils at a temperature of 29.5° with an absolute humidity of  $\frac{29.5}{100}$  (under the given atmospheric conditions of T. = 1°, A. H. = 1.4 grammes), this loss can only have oc-

<sup>2</sup> By means of the same principle, insufficiency or paralysis of the soft palate may be demonstrated. One end of a rubber tube is fitted to one nostril and the other end held in the mouth. Air is then orally inspired through the tube, and traverses the nasal route described in the text. If now during the inspiration the rubber tube be compressed in the middle, an abrupt cessation of inspiration will normally ensue, thus showing the complete closure of the naso-pharynx by the soft palate. Only in the insufficiency or paralysis of the soft palate will inspiration continue, the air then of course entering the lungs *via* the naso-pharynx.

curred in virtue of cooling of the air while in transit through the nasal passages. In other words, the nasal mucous membrane has lowered the temperature of the expiratory current four and a half degrees and received upon its surface in condensation  $\frac{8}{1000}$  grammes water for each expiration. This  $\frac{8}{1000}$  grammes of aqueous deposit is during the succeeding inspiration more or less completely vaporized, passes to the inferior air-passages, and again at expiration falls as dew.

Hence it seems reasonable to infer that the watery running from the nose common to many persons in cold weather is due to an excess of expiratory condensation over inspiratory vaporization, rather than to increased serous transudation from the nasal mucous membrane. This supposition is favored by the fact that excessive serous intra-nasal transudation, demonstrable as such, is accompanied (except in some forms of hydrorrhea) by symptoms of nervous irritation, which in the aqueous discharge above referred to, are wanting. The condensation, other things being equal, will, theoretically, and, as has repeatedly been confirmed by the writer from actual observation, be more marked in persons of a poor peripheral circulation than in those with warm and well-nourished extremities.

#### TABULAR VIEW OF RESULTS AS DETERMINED BY THE PSYCHROMETER.<sup>3</sup>

T., temperature; R. H., per cent. of relative humidity; A. H., absolute humidity expressed in grammes of aqueous vapor per cubic metre of air; G. C., gramme calories per 500 c.c. of respired air.

TABLE A.

## COMPARISON OF EXPERIMENTS WITH COLD DRY AIR.

Cold Dry Air.	T.	R. H.	A. H.	G. C.
<i>Air before experiment</i> . . . . .	1°	44%	1.4	
I. Air after passing nasal chambers . . . . .	28.5	92	25	11.05
Gain, . . . . .	27.5		23.6	
II. Air after normal nasal inspiration and expiration . . . . .	29.5	100	29	
Gain, . . . . .	28.5		27.6	
III. Air after oral inspiration and expiration . . . . .	32.5	97	31	
Gain, . . . . .	31.5		30.6	
IV. Air after nasal inspiration and oral expiration . . . . .	34	100	37	14.83
Gain, . . . . .	33		35.6	

TABLE B.

## COMPARISON OF EXPERIMENTS WITH COLD DAMP AIR.

Cold Damp Air.	T.	R. H.	A. H.	G. C.
<i>Air before experiment</i> . . . . .	5°	100%	6.8	
I. Air after passing nasal chambers . . . . .	28	92	23	8.24
Gain, . . . . .	23		16.2	
II. Air after normal nasal inspiration and expiration . . . . .	29.5	100	29	
Gain, . . . . .	24.5		22.2	
III. Air after oral inspiration and expiration . . . . .	32.8	97	31	
Gain, . . . . .	27.8		24.2	
IV. Air after nasal inspiration and oral expiration . . . . .	34.5	98	36	
Gain, . . . . .	29.5		29.2	

<sup>3</sup> The tables comprising the details of 79 experiments, which were given in full in the original dissertation, have been here omitted for reasons of space, and their results summarized in comparative form.

TABLE C.  
COMPARISON OF EXPERIMENTS WITH WARM DRY AIR.

Warm Dry Air.	T.	R. H.	A. H.	G. C.
<i>Air before experiment</i> . . . . .	26°	22%	1.2	
I. Air after passing nasal chambers . . . . .	31.5	89	26	8.2
Gain, . . . . .	6.5		24.8	
II. Air after normal nasal inspiration and expiration . . . . .	33.5	100	36	
Gain, . . . . .	8.5		34.8	
III. Air after oral inspiration and expiration . . . . .	38.5	100	36	
Gain, . . . . .	8.5		34.8	
IV. Air after nasal inspiration and oral expiration . . . . .	34.9	98	37	
Gain, . . . . .	9.9		35.8	

TABLE D.  
COMPARISON OF EXPERIMENTS WITH WARM MOIST AIR.

Warm Moist Air.	T.	R. H.	A. H.	G. C.
<i>Air before experiment</i> . . . . .	21°	91%	14.5	
I. Air after passing nasal chambers . . . . .	32.5	97	32	3.4
Gain, . . . . .	11.5		17.5	
II. Air after normal nasal inspiration and expiration . . . . .	33.4	100	36	
Gain, . . . . .	12.4		21.5	
III. Air after oral inspiration and expiration . . . . .	33.5	98	35	
Gain, . . . . .	12.5		20.5	
IV. Air after nasal inspiration and oral expiration . . . . .	35	96	36	
Gain, . . . . .	14		21.5	

We come now to the consideration of the alterations in heat and moisture of the inspiratory current effected by the nasal mucous membrane alone, as demonstrated by the experiments in Group I. By comparing the figures there given with those in the group for nasal inspiration and oral expiration, which represent the sum total of changes in heat and moisture effected in the tidal current, a calculation is readily made of the proportion in which the nose is a contributor to these changes. It is scarcely necessary to remind the reader how fallacious in calculating this proportion would be the results of a comparison with air expired through the nose.

It is in the first place evident that the amount of heat and moisture imparted to the inspired air by the nasal mucous membrane is approximately proportional to the differences existing between the state of the atmosphere and that of the air in the middle air-passages. To recapitulate the figures briefly we see that with atmospheric temperatures ranging from 1° to 5°, air is raised in the nose to 28°; with external temperature from 21° to 25°, it is raised to 31.5° or 32.5°.

With an atmospheric absolute humidity of 1.4 grammes vapor at 1° the nose evaporates 25.6 grammes water per cubic metre air; while with practically the same humidity at 25°, there are evaporated 24.8 grammes water, certainly a strikingly slight difference in view of the total amount lost.

Warm moist air would evidently call for less evaporation than cold moist air, if the intra-nasal temperature were the same in both cases. For example, as shown in the tables, air at 21° with 91 per cent. relative humidity has 14.5 grammes vapor per cubic metre,

while air at 5° with 100 per cent. relative humidity has but 6.8 grammes vapor. Therefore, if the intra-nasal temperature were the same in both instances, the warm moist air would require about eight grammes less vapor than the cold moist air. However, in virtue of the greater intra-nasal temperature during the inspiration of warm air, the capacity of the inspired current for moisture is so enhanced that there is actually evaporated over a gramme more water than during the inspiration of cold moist air.

It was found that a quickened peripheral circulation considerably increases the amount of heat imparted to the nasal current; also tests performed in cold weather before meals compared with tests after eating, the atmospheric conditions being the same, showed a gain of one-half to one degree effected by the ingestion of food. Increasing the respiratory rate from the usual 18 to 28 per minute resulted in a loss in the temperature of the air from one to two degrees.

The relative humidity of air after passing the nasal chambers is near the saturation-point, that is, with reference to its own temperature, but with reference to the temperature which it subsequently attains, it falls considerably short of saturation. For example (compare Groups I and IV in Table A), air at 28.5° with a relative humidity of 92 per cent. actually contains but 67 per cent. of the moisture which it possesses when expired at a temperature of 34° and a relative humidity of 100 per cent. In other words, while the nose nearly saturates the inspiratory stream that passes it, it contributes only about two-thirds of the total amount of moisture evaporated by the respiratory tract. The proportion may in any case be ascertained by comparing the increase in absolute humidity effected by the nose with the total increase. From the third column of our four comparative tables we obtain the following results: of the total amount of moisture evaporated the nasal mucous membrane contributes, in cold dry air (as just seen) 67 per cent.; in cold moist air  $\frac{1}{3}\frac{2}{3}$  or 55 per cent.; in warm dry air  $\frac{3}{4}\frac{1}{4}$  or 68 per cent., in warm moist air  $\frac{4}{5}$  or 80 per cent.

From the preceding tables the sum total of energy actually expended by the nasal mucous membrane may readily be computed in gramme calories. For example, if, as in experiments 18 to 20, one cubic metre of air at a temperature of 1°, containing 1.4 grammes vapor, leaves the nose at a temperature of 28.5° in the possession of 23 grammes vapor, it is evident, first, that one cubic metre air and 1.4 grammes vapor have been raised 27.5°; secondly, that 21.6 grammes water have been converted into vapor. These two points are determined as follows:

(1) Since one cubic metre dry air weighs 1.293 grammes at 0° and at 760 mm. pressure, and since the specific heat of air is .28, we have  $(1.293 \times .28) = 297.36$  gramme calories as the amount of heat required to raise one cubic metre dry air one degree. In the present instance it is raised 27.5°, which gives  $297.36 \times 27.5 = 8,177.28$  gramme calories. To this is to be added the work of raising 1.4 grammes vapor 27.5°, which equals  $1.4 \times 27.5 = 38.50$ . Adding these results, we have,  $38.50 \times 8,177.28 = 8,215.78$  gramme calories as the amount of work required to raise one cubic metre air containing 1.4 grammes vapor from 1° to 28.5°.

(2) We have next to compute the amount of work expended in vaporizing 21.6 grammes water at 28.5°. By the empirical formula of Clausius,  $V = 607 -$

$.708 t$  (in which  $V$  equals the heat expended in vaporizing a unit of water at a temperature of  $t$ ), we have  $V = 607 - (.708 \times 28.5) = 607 - 18.77 = 588.23$ , or gramme calories expended in vaporizing one gramme water at a temperature of 28.5°.

Since 21.6 grammes water have been thus vaporized,  $588.23 \times 21.6 = 12,694.75$  gramme calories.

Finally, to this 13,884.22 we add our previous result, 8,215.78, making 22,100 gramme calories as the total amount of heat expended by the nasal mucous membrane under the conditions specified.

If we take 500 c. c. as the tidal amount of air, the thermogenic action of the nose will under the preceding conditions amount, for each inspiration, to  $\frac{22,100}{500} = 44.2$  gramme calories.

Similarly we can compute that under the atmospheric conditions tabulated as warm moist air the expenditure for each inspiration is but 3.4 gramme calories; in warm dry air it is 8.2 gramme calories.

As a therapeutic deduction it appears justifiable to call attention to the antipyretic effect of the respiration of cold dry air. In view of the fact that 11 gramme calories are abstracted from the nasal mucous membrane for each inspiration of dry air at 1° as against 3.4 gramme calories for each inspiration of moist air at 21°, and since, moreover this is a continuous abstraction performed without disturbance of the patient and affecting primarily a portion of the body which it is particularly desirable to cool in febrile conditions,<sup>4</sup> an extended trial of this proceeding appears desirable.

In the consideration of the relation of pathological conditions within the nose to changes in heat and moisture of the respiratory current, interest centres chiefly around those affections in which the nose performs less than its customary share of work. Not only is it of minor importance to know that certain diseases are characterized by a heightening of normal function, but practically deductions from experiments upon this subject are rendered of doubtful value from the fact those conditions presenting such a pathological increase in normal function, such as hypertrophic rhinitis, are commonly associated with nasal stenosis and more or less constant mouth-breathing. The effect upon the organism, if any effect can be supposed to exist, is consequently nullified.

On the other hand, however, it would be of interest and importance to ascertain to what extent atrophic rhinitis sets the normal functions of the nose in abeyance. To illuminate this subject with desirable fulness would require the performance of numerous experiments upon a considerable number of individuals under a variety of conditions. The author prefers to omit, for the present, reference to his own experiments in this connection, as they are not yet sufficiently extensive to justify definite conclusions.

(To be continued.)

MEDICAL STUDY IN NEW ZEALAND. — A bill has been introduced into the legislature of New Zealand which will lengthen the course of study necessary for a degree in medicine from three years, as at present required, to five years.

<sup>4</sup> To obtain the total amount of heat lost by the body in respiration the computation must be based upon the tables for nasal inspiration and expiration. It will consequently average about a third more than the figures given for the nasal loss above, but the comparison drawn will equally well apply.



A STUDY OF AXIS ROTATION, WITH ESPECIAL REFERENCE TO THE TORSION OF OVARIAN TUMORS.<sup>1</sup>

BY MALCOLM STORER, M.D.

My excuse for presenting this paper is that, as in almost everything that has appeared on the subject in recent years there has been manifest a tendency to attempt to fit the cases reported to the preconceived theories of the various writers, it has seemed to me worth while, without reporting any cases of my own and so remaining unhampered by any such necessity, to collect a large number of cases, compare the experiences of different men, and attempt to show whether any one cause can be regarded as the most probable one in every case.

The historical side of this subject may be quickly dismissed. First mentioned by Rokitsanski in 1841, it attracted little attention until 1855, when he gave particulars of 13 cases. The first clinical description was given by Ribbentrop, in 1865; and the first successful operation was that of Wiltshire, in 1868. The subject was then neglected until the last decade.

*Definition.* — I would define torsion as the revolution of a viscus or tumor upon its pedicle or attachment, in any direction, to a degree sufficient to interfere with its nutrition. The distinction between torsion, in this strict sense, and rotation should be closely observed.

In the case of the ovary it is not usual to see torsion until there has been a rotation of at least 180°; and, on the other hand, a tumor is sometimes rotated many times without any torsion.

*Frequency.* — From a lack of care in drawing the distinction between torsion and rotation, there is a wide range of opinion. Thus, Johnson and Wells had each about 2 per cent.; Terrillon 6 per cent.; Thornton 9.5 per cent.; Horwitz 27 per cent.; Thorn 35 per cent.; and Küstner 38.8 per cent., which he explains by saying that in his part of Russia women do not seek surgical relief until urgent symptoms appear. It seems fair to say that rotation occurs in at least 25 per cent. to 35 per cent. of all ovarian tumors, but torsion in only 8 per cent. to 11 per cent.

*Side.* — The statement of Tait, and Hart and Barbour, that tumors of the right ovary are especially liable to axis rotation does not seem justified. To be sure, Terrillon describes 40 cases of the right ovary and only 22 of the left; on the other hand, Thornton saw 28 of each, and in Olhausen's experience the proportion was more than reversed. Bilateral rotation is not uncommon.

*Character of Tumor.* — The accident may affect tumors of any nature, but is most apt to occur to those of irregular shape and varying weight and consistency. Dermoids are especially liable. Thus, in 248 cases of torsion I have collected from various sources, in which the character of the tumor is stated, I find dermoids 43 times. Now as dermoids form at most five per cent. of all ovarian tumors, we should not have had more than 12. Solid tumors of the ovary are relatively rare, yet I find 23 instead of perhaps half that number. Furthermore, in about 83 per cent. the tumor was either polycystic, solid or dermoid, that is, presumably of more or less irregular outline and varying weight, the irregularities affording convenient points for the exercise of the force needed to produce rotation, and

the varying weight tending to produce disturbances of equilibrium.

*Size of Tumor.* — While the tumor will have attained the size of a man's head at least in most cases, the accident may occur to much smaller ones; even cases of separation of the normal ovary by torsion are known (Fraenkel, Klebs). On the other hand, the tumor should not be too great; 66 per cent. of Thornton's cases were less than ten pounds in weight. The mechanical difficulties in suddenly moving a tumor which fills the abdomen tightly must be very great, and we know how hard it often is to do so manually, even after the abdominal cavity is opened.

*Direction of Rotation.* — While it is conceivable for a small ovarian tumor to be rotated in an axis either downward or upward or horizontally outward, in by far the greater number of cases the axis is upward and slightly forward. In whatever axis, the tumor may, of course, be rotated to the right or to the left. The lamentable lack of exactness we find in specifying the direction seems to me to be due to an uncertainty as to what twisting to the right, for instance, really means. I have come across several cases in which the twist is given in one direction, when it was perfectly evident that it really was in the other. An ordinary screw or corkscrew is an example of twisting from the left upwards to the right; and so if we place a corkscrew upon the abdomen, handle downwards, the thread gives the spiral of a tumor rotated from the left to the right, that is, a right spiral. In 1891 Küstner, noticing that in all of four torsions of the right ovary there was a left spiral, while in six of the left ovary there was a right spiral in five, formulated the law of torsion, namely, that right ovaries tend to rotate to the left, and left ovaries to the right; in other words, that part of the tumor nearest the median line tends to swing forward, then outward and then backward. A simile that seems to me to best describe this tendency is the motion made by the arms in swimming.

Thorn ingeniously seeks to explain the many exceptions, by supposing in the atypical cases that the ovary has a long enough pedicle to lie on the other side of the body, in which case it follows the law as if it were the other ovary.

In 1890 Freund claimed that a certain rotation occurs normally. He showed that an ovarian tumor at first falls backwards, without any rotation, with its pedicle lying anteriorly. As it reaches the second stage of its development, that is, when it becomes too large to be contained any longer in Douglas's pouch, the time finally comes when that portion of the tumor external to the pelvis exceeds in weight the rest, and an often sudden re-establishment of equilibrium ensues, the lower portion being swung up out of the pelvis, and the tumor as a whole undergoing enough of a revolution to bring its pedicle, which was anterior, upon its posterior side.

Freund found normal rotation in about 75 per cent. of his cases. Its absence in the remaining he ascribed to rigidity of the abdominal walls. The question of why this primary normal rotation should be to the right on the left side of the body, and to the left on the right side, Freund, accepting Küstner's law, attempts to explain in a later paper by an appeal to the law of spirality as formulated by Fischer, namely: (1) Axis rotation is a property of the living cell; (2) growth of the organism takes place under constant axis rotation; (3) bilateral symmetrical organisms —

<sup>1</sup> Read before the Obstetrical Society of Boston, May 19, 1896.

such as ureters, ribs (and ovaries)—have a spiral twist to the right on the left side, and to the left on the right side. Eight out of eleven recent cases of torsion of the testicle bear this out. While not denying the possible truth of this law, it seems to me much more likely that the ovary should twist the pedicle than *vice versa*. The promontory of the sacrum may play a rôle much more important than it has thus far been given credit for.

Let us follow the growth of a cyst. First of all, it falls backwards and inwards into the cul-de-sac; and its pedicle is not only on its anterior surface—as Freund showed—but also on the outer half of that anterior surface, and the more so the nearer the tumor approaches the median line. With further growth the cyst rises upwards in the pelvis; but to a certain extent it will be diverted from an exactly median upward course by the promontory of the sacrum, which crowds forward the more mobile part, that is, that nearest the median line, to such a degree that when the final effort to establish equilibrium comes, it is so far anterior that abdominal pressure is able to obtain sufficient leverage upon it from behind to swing it forwards much more easily than the comparatively fixed portion in the region of the pedicle. When the new equilibrium is established the pedicle will be found posterior; while to get it in this position, the cyst will have made one-quarter revolution forward and away from the median line. Given this normal primary rotation, it is at least probable that further and pathological rotation will be in the same direction.

An exciting cause for further rotation is generally to be sought for. Theories are very numerous; but the truth probably is that under certain conditions many causes can produce the same effect.

Conditions favoring rotation are, a large frame, with lax or pendulous abdominal walls, and a tumor of irregular surface. The condition necessary is freedom of movement, that is, sufficient length of pedicle and lack of adhesions to solid structures; adhesions to intestines are not of necessity a bar.

Exciting causes have been found in—

#### I.—THE TUMOR ITSELF.

by disturbances of equilibrium from irregular growth (Olhausen, Cario). Freund insists on this as the chief factor of even torsions of high degree.

#### II.—OTHER ORGANS.

##### A.—UTERUS.

- (1) Pregnancy (Barnes, Schröder, Tait, Wilson). Sixteen per cent. of Thornton's cases were pregnant. Torsion may be due to fetal movements or directly to displacement of the tumor by the uterus.
- (2) Labor (Sippel, Robinson).
- (3) After labor (Aust Lawrence, Mangiagalli and many others). It followed labor in five per cent. of Thornton's cases. It can easily be seen how a torsion can arise from a tumor falling in from above and outside to fill the void left by the empty uterus.

##### B.—BLADDER.

Klob, Aronson and Thorn think torsions are most often due to the alternate filling and emptying of the bladder, helped out by movements of the rectum.

##### C.—RECTUM.

Tait and most of the English school hold that the descent of feces into the rectum plays the most important rôle. Cario suggests that the act of defecation might be a cause. Suppose a tumor of the right side: in defecation, with the contraction of the abdominal muscles, the intestines are suddenly pressed against the tumor from the left and behind—then the rectum empties and the tumor might roll over into the empty space.

##### D.—INTESTINAL PERISTALSIS.

This is favored by Küstner, Thornton, Mundé and Olhausen. It seems hardly possible that this alone should have power to exert force enough upon a body smooth or at all regular, unless adherent to it as in a case of Cario.

#### III.—ANOTHER TUMOR (WELLS, KESSELE, THORNTON, HEURTAUX).

#### IV.—UNUSUAL, SUDDEN OR CONSTRAINED MOVEMENTS OF THE BODY AS A WHOLE.

Vomiting (Thornton).  
Straining at stool (Fritsch).  
Sudden long breath (Thornton).  
Lying down (Thornton).  
Cough (Thornton).  
Stooping to pick something up (Cario).  
At work stooping.  
Running.  
Mistep going downstairs (Baer).  
Change of position in bed.  
Twist of body in getting out of bed (Robinson).

#### V.—TRAUMA.

Tapping. Conditions are especially favorable after the tapping of multilocular cysts (Malina, Thornton, Fränkel).  
Fall (Savage, Patruben).  
Jolting in sleeping car (Paton).  
In the case of Fowler, a washerwoman, it was due to the pressure of the tub against the abdomen, combined with the up and down movements of the body in scrubbing.  
In other cases torsion has been ascribed to such unusual causes as the administration of an enema, and the use of sponge tents and in two of Fränkel's cases it was the direct result of gynecological examination: in one case Schröder could produce rotation through one and one-quarter turns at will manually.

An interesting case of Bachman gives a hint at the possible genesis of many torsions. The patient had a large movable cyst and a smaller tumor with a long pedicle. If she changed from the dorsal position to her left side, the tumor would revolve over in that direction, this being helped by the coils of intestine rolling up from behind the tumor from left to right. A complete return to the original position could be obtained only by rolling over on the right side. When the patient sat upright from the left decubitus the tumor would be held in its partially twisted position by gravity and abdominal pressure—a condition most favorable for acute torsion, which, in point of fact, occurred four weeks later. Gravity, plus the movements of the intestines *en masse*, may, it is safe to say, account for many cases. Even those which come on while patients are quietly sleeping are not incompatible with this theory. Given as a result of some change in position a certain amount of axis rotation: there are very likely no symptoms at the time, but the tumor is held in its new position, and passive congestion slowly goes on; but until the congestion becomes acute and total, possibly when the patient is asleep hours later, there may be no actual strangulation to attract her attention. Thus many apparently causeless torsions are in reality to be referred to a rotation hours old.

*Seat of Torsion.*—It may be anywhere in the pedicle, but is usually in the middle of the uterine third (Freund). Sometimes there are two or more distinct points of strangulation (Fränkel, Parke, Mundé). The number of twists depends upon the length of the pedicle. In 44 cases in which there was a revolution through at least 360°, I found one and one-half turns eleven times, two and one-half turns nine times, three turns eight times, and a larger number much less frequently. Several cases of ten or even twelve complete revolutions are known.

The result to the tumor depends upon how completely and rapidly circulation is cut off. There may be many twists without the slightest interference with the blood-supply, and consequently no torsion in the surgical sense. The first effect of compression of the blood-vessels of the pedicle is naturally to impede venous return, and accordingly the almost constant result is a rapid increase in the size of the tumor. For instance, Anderson saw a tumor the size of an orange reach the umbilicus five hours after a torsion

of only 180°. In Robinson's case the tumor was twice as large at the end of labor as it was at the beginning. A result of the passive congestion in more than three-fourths of the cases, is an early rupture of capillaries, with hemorrhage either into the tumor or between the layers of its walls, or into the pedicle (Neusser). Thrombosis may run up extensively into the veins of the broad ligament (Freund). Thornton was hardly correct in saying that hemorrhage always occurs. The torsion may be so sudden and complete as wholly to cut off the arterial as well as the venous circulation, in which case there will be practically no hemorrhage. These hemorrhages may be copious enough to rupture the cyst and kill the patient at once from shock or loss of blood, or she may die from hemorrhage into the cyst without rupture (Patruben, Wells).

There may be ascites from the passive congestion. In Schurino's case it was sufficient to threaten life.

When the blood-supply is extensively impaired, prompt signs of peritoneal irritation generally appear. Resulting adhesions, if to the bowel, may become a source of great danger should subsequent rotation take place. Cases of intestinal obstruction, either from its being directly adherent to the tumor or its pedicle, or from inflammatory bands, are quite numerous (11 cases). In Günther's case it was due to the twisted cyst becoming incarcerated in the entrance of the pelvis, blocking the rectum.

On the other hand, the evidences of inflammatory trouble may be at first confined to the parenchyma of the tumor. Gangrene or necrosis may ensue without much peritonitis (Tait, Olhausen), or the tumor may suppurate, of course, most frequently when there has been some surgical interference, such as tapping; but infection may come from the tube, especially if it be part of the pedicle (Thorn). Torsion of dermoids is apparently much more dangerous than that of other tumors, as would be expected with the interference of nutrition of such highly complex structures.

Torsion may be extreme enough to separate the tumor completely; but if the process be gradual, sufficient nutrition can sometimes be gained from adhesions to maintain its vitality. A new pedicle even may thus be formed, which in its turn may become twisted (Chalot). It must not be forgotten that it is quite possible for a torsion to untwist itself (Olhausen, Pozzi); in such cases the pedicle will probably be very long and the tumor very movable. The process may also be conservative, and a cure result from retrograde metamorphosis.

**Results to the Patient.**—The clinical picture depends more on the rapidity than on the completeness of torsion. If sufficiently gradual it may be so complete as to separate an ovarian tumor off entirely, and yet there be no reaction on the part of either the tumor or the peritoneum covering it, and consequently few symptoms (Bennet, Schwartz, Smith). As a rule, however, symptoms are fairly definite. A woman having a tumor will, soon after some unusual exertion perhaps, be seized with agonizing pain, often radiating downward from the tumor along the inner side of the corresponding thigh or outwards into the lumbar region. This pain will generally be followed by a rapid augmentation in the size of the tumor. Vomiting begins, the pulse runs up, and in a short time the positive signs of peritonitis appear. Among more uncommon results is metrorrhagia (Braun). Koeberle

regards a constant dribbling of blood as very suggestive. According to Moulis and Reboul, there are two pathognomonic signs: a systolic murmur at the tender point and a pulsating movement of the tumor coincident with the cardiac beat.

Very rarely the enlarged and tender twisted pedicle can be felt by the vagina (Thornton).

In a woman known to have an ovarian tumor such a symptom-complex will at once suggest the possibility of torsion; but to show that the diagnosis is not always easy I have collected a few of the supposed conditions in cases proving to be torsions, and all these were in the hands of good men: Fibroid, with hemorrhage into the cavity of the uterus; extra-uterine pregnancy; hematocele; ruptured cyst; labor (by patient herself, she not being in reality pregnant); volvulus; suppuration of cyst from other causes; movable kidney; appendicitis; and others still more improbable. Most of the "inflamed cysts" are probable torsions. Of course, coexisting conditions may mask a torsion. Tait once did a herniotomy upon a patient who in addition to the hernia, which was strangulated, had unrecognized strangulated ovarian cyst, which proved fatal.

**Treatment.**—Acute torsion being suspected, the only rational treatment is to operate at once before the onset of peritonitis. Aronson's figures show the value of operation sufficiently well: not operated, 26 cases, 80.7 per cent. mortality; operated, 36 cases, 16.9 per cent. mortality.

With earlier operation much better results could be obtained. Even a rally from the primary shock cannot be counted upon. As a rule, such patients go from bad to worse. The added danger of early operation is slight, the advantage great.

Should a patient with an ovarian tumor become pregnant, abundant cases show the possibility of being called upon to do an emergency operation for torsion during the puerperium. In 150 laparotomies by Mangiagalli, five were for torsion following labor. One need not hesitate to do an ovariectomy during pregnancy, and recent cases of Delageniere and Murphy show that even an operation for torsion need not interrupt the course of pregnancy.

Torsion of the Fallopian tube, other than as pedicle of an ovarian tumor, is extremely rare. Sutton refers to Morris's case of hydrosalpinx, with three and one-half twists. Delbet had a case presenting all the symptoms of volvulus. He found a left tube, black and hard, the pedicle of which was twisted one and one-half times. Warnek had a case of pyosalpinx, with twisted pedicle felt by the vagina and confirmed by laparotomy, and a case of cystic tumor of the tube twisted four and one-half times. Hartman and Raymond report a hydrosalpinx of the left side, with a right spiral twist of four turns. Dr. Pierson, of Salem, recently reported, at the Warren Club, a case of pyosalpinx closely simulating appendicitis. The right tube, dilated to about six inches by four, and full of pus, had close to its uterine end a twist of one and one-half turns from before backward, completely strangulating it. The tube lay above the brim with its fimbriated extremity looking towards the loin and its convexity presenting at McBurney's point.

Torsion of the tube gives much the same clinical picture as that of an ovarian tumor. In the few cases reported intestinal paralysis has been especially marked.

Torsion of the uterus is not very rare. In animals the physiological slight rotation of pregnancy often becomes torsion. The uterus may become twisted by ovarian tumors, as part of their pedicle, but the accident is generally due to fibroids. Thus, Virchow describes a case in which the uterus was twisted once on its axis and reduced to a band by a small subserous fibroid. Skutsch, from the same cause, found a twist of 180°, with rapid congestion. Küstner saw death quickly follow torsion of a fundus the seat of multiple fibroids. There were two and one-half turns. Homans, in a patient dying thirty-nine days after acute symptoms, found the fundus united to the cervix by a band of fibrous tissue twisted one and one-half turns from left to right. Pick, in a case dying after eight days of intestinal obstruction, found the intestine adherent to the uterus, which was twisted twice from left to right by a small subserous fibroid. Douglas had a large fibroid become twisted, with the uterus taking part in the torsion. Holst saw in a patient, the subject of an old prolapse, a sudden disappearance of the prolapse with great pain and vomiting. Operation showed a fibroid of the right fundus twisted 90° from right to left. Schauta had a case of strangulation of the retroflexed uterus following the lifting of a heavy burden, the right cornu lay in Douglas's pouch, while the left was turned up and forwards.

I have collected these cases of torsion of tubes and uterus merely to show that the ovary is not the only one of the pelvic organs liable to the accident. The treatment in all cases is identical — prompt operation.

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## GAUZE AS A MEANS OF DRAINAGE.

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THERE can be no doubt that the treatment of wounds without drainage is the ideal method. As the technique of the individual operator becomes more perfect, as a result of experience and painstaking care, so will the wounds which he makes more surely heal in this manner. The use of drainage is an acknowledgment of the limitation of the surgeon's ability.

Unconscious ignorance may result in disaster and is not far short of criminal; conscious ignorance, on the principle of "forewarned is forearmed," may avert ruin and stands next to knowledge. Admitted inability to so dress wounds that they will always heal by primary union is the excuse for the use of drainage. Indeed, as at present advised, the surgeon finds, in large aseptic as well as septic wounds, drainage indispensable. Until some plan is discovered to render all foci of infection absolutely sterile without destruction of the healthy tissue, and some way is devised to more surely limit the quantity of effused blood and serum in wounds, drainage must play an important part in their treatment.

"Perfect coaptation" of divided tissues, deep and superficial, coupled with aseptic or antiseptic precautions of the most scrupulous character, will not always give union by first intention, because more blood and serum will be exuded than is needed for the repair of the wound or can be taken up by the absorbents, and, too, perfect coaptation is only approximative.

Of the various methods in vogue to get rid of the fluids which accumulate in wounds, septic or aseptic, occasioned by the many operative procedures, whether upon the surface or invading the closed cavities of the body, none more fully meets the indications and commends itself to the surgeon, than capillary drainage by the means of gauze.

It always takes an exception to prove the rule, and it is obvious that in the case of chronic discharges and where repeated irrigation is required, the tubular drain would be preferable. The gauze drain accomplishes its purpose by its inherent quality of capillarity and acts continuously; while the other means of drainage have to be supplemented by suction, position or capillarity. Its range of application is broader and it fulfils more indications than any other method. The soft, unirritating cotton is much more grateful to the patient than the unyielding glass or the stiff rubber tube; neither is it an eye-servant, like them both, for

it can be trusted to do its work alone, only remembering that an abundance of loose, crumpled gauze should be so placed as to serve as a receptacle for the fluid as it is delivered from the drain, and that it should be replaced by fresh, dry, sterilized gauze as frequently as it becomes moist.

An ideal drain would be one which, when it had done its work, might then be absorbed, leaving no trace behind. The decalcified bone drainage-tube, if it could be rendered surely sterile and could be induced to remain patent long enough to accomplish its purpose, would serve the surgeon excellently well. But, at present, it is, to say the least, disappointing; and even if it were all that has been claimed for it, still its range of application would be narrow.

As an all-round means of drainage, the gauze more surely subverts the purpose than any other material, and is as much of an advance from the glass tube of Koerberle and Keith as is the intra-peritoneal treatment of ovarian pedicle in advance of its management by clamps or ligatures extra-peritoneally.

So far as its capillarity is concerned, it makes but little difference, practically, whether the gauze is plain or medicated, for in a series of experiments I observed that a plain gauze would drain seven ounces of fluid, while a ten-per-cent. iodoform gauze drained six and one-half ounces; both drains being of the same size and number of strands and all the conditions identical.

I also found that a piece of plain gauze of the same size as the two mentioned above, wrapped in protective, each end extending an inch beyond the covering, with many holes snipped in the wrap, under exactly the same conditions, would drain but five ounces, while the others were draining six and a half and seven ounces respectively, showing that the wick gauze drain has a decidedly diminished capillarity. It was also observed that the same number of strands as contained in the other drains, with the warp removed, the wool made into a wick, possessed no advantage over either the plain or medicated gauze as to its power to drain fluids.

When drainage is necessary in abdominal section, the gauze should always go to the floor of the cavity to be drained; otherwise, fluid may accumulate below and produce disastrous results. It is also an advantage to have the drain extend over the side of the patient and down to and a little beyond the level of the bottom of the cavity. For it was observed, in conducting the experiments mentioned, that in the drainage of fluids from glasses the contents were much more rapidly drawn out in those in which the drain extended just below the level of the bottom of the glass than those in which the gauze came down but half-way.

On the 10th of June, 1895, an opportunity presented itself, enabling me to make a practical application of this principle. June 9th, I was called to see Mr. P., age twenty-two, in consultation, and found him ill, with the history of appendicitis extending over seven days. He had had several slight attacks within the two years prior to my visit. There was a well-defined swelling in the right iliac region, but no fluctuation could be made out. Arrangements were made to operate the next morning. It was late in the afternoon. I was twelve miles from home, with no instruments, not having the slightest idea of the character of the case I was to see.

When the peritoneum was incised, a portion of the ilium presented; the intestine was pushed back out of the way and held there by gauze; indeed, gauze was packed all about the region of the abscess, completely walling off the general cavity. The abscess was finally opened with the finger, and by careful manipulation several pockets of pus were found and evacuated. Feeling satisfied that there were no more sinuses, and believing the best interests of my patient would be subserved by not attempting to find and remove the appendix, the abscess cavity was well dried out with sterilized gauze and drained by strips of iodoform gauze lightly packed to the bottom. These strips of gauze drain were long enough to come down over the flank to a point below the level of the bottom of the pus cavity. A liberal quantity of loose sterilized gauze was placed about the region of the end of the drain, several thicknesses of iodoform gauze and sterilized cotton having been put over the field of the wound. The case was left with the physician in attendance, with the direction to remove the receptacle gauze as soon as it became moist. Twenty hours after, it having become "quite wet," he took it away and replaced it with dry, sterilized gauze.

I saw the patient on the third day, and found the dressings in the immediate vicinity of the wound were quite dry, while those at the end of the drain, as well as the bed beneath, were more than moist. The packing and drain were all removed at this dressing; the general peritoneal cavity was completely walled off by adhesive inflammation. The abscess cavity was washed out with hydrogen dioxide and drained as before. There was but little work for the drain to do after this dressing, there being but a very small quantity of serum and practically no pus.

The patient made an uneventful recovery, and at the date, of this writing, March 10, 1896, he is perfectly well.

Since writing the above I find that Dr. Weller Van Hook, of Chicago, in a paper read before the Chicago Gynecological Society, January 17, 1896, and published in the *American Gynecological and Obstetrical Journal* for March, calls attention to the increased capillarity of the long gauze drain over the short, and advises, in abdominal sections, and in order to obtain the maximum amount of capillarity, that the strips should be long enough to fall over the flank of the patient and into dressings of gauze at the side and back.

The gauze drain commends itself because of its simplicity, its ease of application, its greater comfort to the patient, because it acts by its inherent power, requires a minimum amount of watching, and more fully meets all the requirements for which a drain is used than any other single substance.

NOT SO OLD AS HE LOOKED. — Mr. Reynolds is a bright and well-preserved old gentleman, but to his little granddaughter Mabel he seems very old indeed. She had been sitting on his knee and looking at him seriously for a long time one day, when she asked suddenly, "Grandpa, were you in the ark?" "Why, no, my dear!" gasped her astonished grandparent. Mabel's eyes grew large and round with astonishment. "Then, grandpa," she asked, "why weren't you drowned?" — *London Answer*.

# A CONTRIBUTION TO THE STUDY OF LARYNGEAL VERTIGO.

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BESIDES the two cases of my own to be reported in this paper, I have found 75 other cases of laryngeal vertigo, making a total of 77.

CASE I. G. O., male, manufacturer, age fifty-four. I saw him, in consultation, October 9, 1898. I was asked to see him, since a short time before he had lost consciousness and fallen while coughing.

At that time and subsequently I got this history.

A brother had had a well-marked epileptic seizure, so characteristic that it was an accepted fact in the family that he was epileptic.

Until the later part of his life the patient has been subject to intense headaches, which had kept him from work, at times half a day. Fitting of glasses relieved these headaches only to a degree. With this exception, he had been a pretty healthy man, and had managed large affairs.

In 1890 he had the grip, which was followed by catarrhal trouble. In the spring of 1891 he had acute rheumatism, and after that was never well. After this, also, he had business perplexities, annoying rather than serious. From this time to the end of his life, he was subject to great despondency and depression, out of proportion to any cause.

For a year previous to my visit he had spells of labored breathing at night, terminating in what his wife described as a sort of explosion. He had coughed several months previous to my visit. Sometimes the paroxysms would be of considerable severity, but they were not accompanied by loss of consciousness or fall. He would, however, frequently put his hand to his head when coughing.

There were two accidents of the loss of consciousness and fall within a short time of each other. They were accompanied by tickling about the larynx, and cough. The second his wife saw. He was going from one room to another. He coughed, but did not have a severe paroxysm. His wife thought his face was flushed, but does not remember that it was markedly so. He arose quickly with her help, but she thinks her assistance was not essential. He looked about wildly for a moment, and then appeared as usual.

When I saw him for the examination, I did not notice any unusual excitement. But I was afterwards told that he was under a good deal of nervous tension. I had previously had his sons under my care and, for their relief, had done some simple operation. He was apprehensive that my mirrors, etc., meant some operation upon him.

He went into an adjoining room to remove his clothes for an examination of the chest, and when he came out said he had had a mild attack with tickling and cough. He did not fall, but for a moment felt incapable of effort, mental or otherwise, and was apprehensive of something more serious. His cough could not have been severe, for I did not notice it; nor do I recall it, though I was but a few feet away.

Gleitsmann describes in his patient a similar condition of uncertainty.

In the nose was found a deviated septum with exostosis. There was chronic naso-pharyngitis, relaxed uvula and inflamed tonsils, the left being covered with a grayish exudation. The vocal bands met in the

median line on phonation; the left seemed thinner than the right and was more overlapped by the ventricular fold. A few scattered bronchial râles were heard in the chest. Nothing abnormal was detected about the heart. The urine had repeatedly been examined, with negative results. The treatment was astringents to the pharynx and naso-pharynx in addition to the measures already in use.

He soon was as well as usual, and remained so until eight days before his death, February, 1894. He died of pericarditis following acute rheumatism.

CASE II. D., male, hotel clerk, age twenty-nine. The previous history was negative. The duration of the cough was six weeks. The patient was of a nervous, excitable temperament, stout, of a florid complexion, evidently a hearty eater and used to a little exercise.

In the nose was a prominent exostosis and the mucous membrane was inflamed. There was chronic naso-pharyngitis, enlarged tonsils, enlarged lymph follicles at the base of the tongue, and hyperemia of the larynx.

In the chest were heard a few hoarse râles. The cough was violent, and once while talking he began to cough and suddenly became unconscious and fell. There was tickling of the throat just below the larynx, and that excited the paroxysms of coughing. I saw this patient but once.

Sex. — Reviewing these 77 cases we find all but four to be males.

Age. — Seven were over sixty years of age, the oldest being seventy-two; 19 were between fifty and sixty; 28, between forty and fifty; nine, between thirty and forty; one, twenty-nine; one, seventeen, and two were put down as young men.

Occupation. — Although information on this point was lacking in many cases, from what we have it seems that the patients were generally of the well-to-do class, and followed a more or less sedentary life. Thus we find clergymen, clerks, physicians, merchants, bankers, a journalist, lawyers, a tailor. There was but one whose occupation indicated an out-of-door life, a sailor.

Previous History. — Rheumatism is mentioned in 13 cases; gout in six; bronchitis in nine; cough for a long period (either at intervals, winter cough, or more or less continuous, sometimes associated with emphysema) in five; asthma in three; hay fever in one; syphilis in three; gonorrhea in two; vertigo from indigestion in one; fish-bone in the throat in two. Of the following accidents and affections note is made of one instance of each; garroting, traumatic injury to nose in infancy, bitten by a mad dog (and Pasteur treatment), lead colic (and after two years cerebral congestion), hepatic colic, intermittent fever, typhoid fever and phlebitis, influenza, diabetes.

Nervous Phenomena and History. — One was epileptic; one had supposed history of epilepsy; one had had fits and had fallen in the street; one had an epileptic brother; the cousin of one died in an insane asylum; one had injury to the head and subsequent loss of consciousness; one had incomplete history of hereditary neurosis; one had suffered from over-study in college and from nervous strain in troublous times; one had unsteadiness of gait; two, intense headaches; in one, the attack was precipitated by nervous exhaustion and fatigue; ten were said to have nervous temperament.



*Loss of Consciousness* is expressly stated to have occurred in 61 cases; fall in 42.

In a very few cases the attack occurred while the patient was in bed, and in a few also while sitting, the head then falling on the body.

*Mental Confusion* was noted in six cases, usually slight; in 13 it was distinctly stated that it did not occur; and in several cases it was stated that the patient at once arose and resumed his occupation, without any confusion.

*Dizziness* was mentioned in seven cases, while in three it was distinctly stated that it did not occur; true vertigo, that is, outside objects seeming to revolve about the patient, was mentioned but once.

*Convulsions.*—These were distinctly stated not to occur in eight cases; twitchings of the face were mentioned in five; of an extremity, usually the upper, in three cases; clonic contraction of the arm occurred in 12; and one had such severe general clonic convulsions as to throw him out of bed (Newcomb).

*Biting of the Tongue* was noted in two cases, while in many it was stated that it did not occur.

*Involuntary Micturition* and incontinence of feces occurred in but one instance, and in this case at very rare intervals. In a number of cases it was stated that it did not occur.

*After Cough.*—In 66 cases it was stated that the attack followed cough. In one (Russel) the patient could not cough. Again (Browne) sneezing and blowing the nose precipitated the attack.

*Tickling or Burning Sensation about the Larynx.*—This symptom was mentioned in 29 cases, while in one it was stated that it did not occur.

*Condition of the Face.*—Congestion of the face was noted in 23 cases. In four of these pallor followed the congestion. Five were reported pale.

*Abnormal Condition of the Nose and Throat.*—Deviated septum is given in six cases, hypertrophied turbinates in two, nasal polypus in two, disease of adjoining sinus in one, granular pharyngitis in 10, elongated uvula in six, adenoid tissue in the vault in one, hypertrophy of the facial tonsils in two, hypertrophy of the lingual tonsil and lingual varix in seven, and hyperemia of the larynx in 16.

*Abnormal Condition of the Lungs.*—Bronchitis was noted in 13 cases; a few were emphysematous, and one had tubercular disease.

*The Number of the Attacks* varied greatly. One of Knight's cases had but one. Most had several; one had twenty in one day; another ten in a year; another eight in two years; Duavin, a physician, had three—one in 1877, one in 1882, and one in 1885.

*Miscellaneous Symptoms.*—Two patients, men aged sixty-four and sixty-seven had associated with the attacks whooping-cough. Ten had attacks at meal-time, usually dinner, and usually also after the meal. Eight were smokers, some to excess. In one case an attack happened while the patient was smoking, and apparently was precipitated by it. Six used alcoholic liquor, though but two or three to excess.

*Cure* was reported in 19 cases, relief in two. The treatment has been by morphine, bromides and anti-pyrine, and measures directed to any abnormal condition of the nose, throat or lungs.

The most interesting aspect of this subject is, What is the nature of the affection?

There have been three theories: Charcot regarded it as analogous to Menière's disease, the superior lar-

yngeal being the afferent nerve; Gray called it a manifestation of epilepsy; while McBride found the explanation in Weber's experiments on forced expiration with closed glottis.

None of these have been entirely satisfactory, and the matter needs elucidation.

Charcot's great name, connected with the fact that he first described the disease and designated it by the term "laryngeal vertigo," has assured thus far the continuance of that term. But, evidently, it does not truly express the facts. In the first place, vertigo or dizziness is mentioned as a symptom in but seven of the 77 cases. Again, in Menière's disease, the dizziness persists, while in this affection, as a rule, immediately after the attacks the patient arises and feels as well as usual, sometimes laughing at the fears of bystanders.

*A priori* it is not from the larynx that vertiginous sensations proceed. It is well known that when manipulating the ear by syringing, or otherwise, vertigo may be expected, and does not infrequently occur. On the other hand, I can find no instance of such symptoms following manipulations of the larynx, either with fluids or surgically.

*The Epileptic Theory.*—Against this, one at once thinks of the age of the patients, the short duration of the disease in many cases, the absence of biting of the tongue and of involuntary micturition, and the curability of the disease. On the other hand, it must be remembered that the cure has followed, not only the use of the bromides, but the removal of some abnormal condition of the nose or throat.

In this connection it is interesting to note the cure of a well-marked case of epilepsy by the removal of a tumor from the larynx (case of Summerbrodt); also that in this series, four cases had previously had attacks of an epileptic nature; while in 20 during the attack, there were convulsive movements of the face, extremities, and, in one, convulsive movements of the whole body.

No one of these considerations would preclude the possibility of epilepsy. On the other hand, those most markedly epileptic were not so characteristically so as to put the question beyond doubt.

The theory of forced expiration with closed or partly closed glottis, causing interference of circulation and oxygenation of the blood, and action on the circulatory centres of impure blood, next demands consideration.

If this be the true explanation, it would seem that the failure of proper circulation preceding the attack should be the rule; while only in 23 cases was any peculiarity of color noted, the face being more or less turgid in hue. Five were pale.

Again, in many, the fall occurred immediately upon the tickling and first cough, too soon to permit the explanation of circuitous inhibition through defective circulatory or respiratory activity.

Further, it seems to me an entirely rational objection to urge that while many persons with weak heart and impaired respiratory power have severe paroxysms of coughing, so few instances of loss of consciousness have been noted; and loss of consciousness associated with a fall is to a lay person such an alarming symptom that it is improbable that it would often occur without attracting attention. It must be noted, however, that Garel and Collet elicited information of loss of consciousness only after questioning, the patient not attaching enough importance to the accident to re-



member it. On the other hand, Armstrong repeated Weber's experiment with his patient, with no result.

Again, Adler says of his patient: "It is to be noted, that while no seizure ever took place without preceding cough, by no means every violent paroxysm of coughing was followed by loss of consciousness." The same is true of my first case. Garel and Collet make the same observation.

These considerations, it seems to me, make the circulatory theory entirely inadequate, except perhaps as an exciting cause in a limited number of cases.

Let us again consider the nervous phenomena of these cases.

Note was made that ten of the series were of nervous temperament; and these more serious nervous disturbances are in addition noted:

One of Charcot's cases was epileptic. Gasquet's had history of supposed epilepsy. Gray's had injury to the head by a bullet and previous loss of consciousness, that is, previous to the attacks under consideration. One of Leffert's had incomplete history of hereditary neurosis. One of Knight's suffered from overstudy in college and business worry in troublous times; his other case had had vertigo from indigestion. In Armstrong's case the attacks were precipitated by nervous exhaustion and fatigue. Berkart's patient had had several fits, and had fallen in the street. Browne notes, in one of his cases, unsteadiness of gait and intense headaches. One of Garel and Collet's patients had a cousin who died in an insane asylum, while in one of my cases, there was history of epilepsy in the family—a brother—intense headaches for a long period, and profound despondency and depression. Further, as we have seen, during the attacks, convulsions occurred in 13 cases, twitchings of the face in four, and of the arm in three.

Whether or not we call the trouble epilepsy, a disease of which we know so little, it is evident that at least there is a condition of unstable equilibrium of the central nervous system, and that that is the fundamental pathological factor.

That the attack is precipitated by a cough and irritation about the larynx is plain; that the respiratory theory of McBride does not account for all the cases, also seems plain. What then is the exciting cause? Brown-Séquard has conducted a series of investigations which throws light upon this subject. These researches show that the larynx has a direct and intimate relation with the central nervous system. He sums up his results in these words:

"The cases reported in this memoir demonstrate that a general reflex analgesia can be produced—

"(1) By a traumatic irritation of the skin of the neck, of the trachea, but especially by the larynx.

"(2) By galvanization of the larynx or the superior laryngeal nerve.

"(3) By irritation of the mucous membrane of the larynx by chloroform, cocaine, etc."

I submit these conclusions:

The phenomena under consideration occur in persons in whom there is evidence of unstable equilibrium of the central nervous system.

There is some abnormal condition of the air-passages likely to produce laryngeal irritation, with cough and glottic spasm.

The spasmodic closing of the glottis may, and in many cases does, act directly and immediately upon inhibitory centres of the brain and cause syncope.

A severe paroxysm of coughing which produces congestion of the cerebral vessels may also cause syncope. But it will not cause it unless there be an existing disorder of the central nervous organ.

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THE JUBILER OF THE PATHOLOGICAL SOCIETY OF LONDON was celebrated on the evening of October 24th. There was a reception and an address was delivered by the President, Mr. H. T. Butlin.

## Clinical Department.

### MYELITIS: A CASE IN WHICH THE FIRST SYMPTOMS APPEARED SEVERAL WEEKS AFTER THE SUPPOSED CAUSE.

BY S. G. WEBSTER, M.D., BOSTON.

THE principal point of interest in the following case is the long interval between the slight accident and the first symptom.

I was asked to see Mr. B. C. in the spring of 1895. He had had very good health during the sixty-eight years of his life. He had not had rheumatism, nor fever. Some fifteen years ago he suffered from sciatica, which he had contracted by going out in his slippers. He recovered from that, and had no such trouble afterwards. Six or eight years ago he fell about four feet, laming his left leg. From this he recovered. Otherwise I could learn of no injury nor illness, except that about Christmas, as he was about to step off the sidewalk, he fell on his left knee on the stone crossing; he split his trousers and sprained his ankle; he was laid up a day or two.

Five weeks ago he had a narrow line of pain on the right side under the ribs, more in front; this pain extended up towards the axilla. It began suddenly; was not severe, rather of a dull, heavy character; was increased by certain motions. He was not laid up by it; got mainly over it in two weeks, except in one small place. There was no pain in the legs, and none to speak of in the back. About two weeks ago, on coughing he felt a slight pain in the back, which extended down the legs—a kind of shooting pain “as if through a thousand nerves,” a kind of tingling and pricking feeling. Just over the lower ribs on the right is a pain similar to that felt at first, increased by coughing and sneezing. There was no change in the power of motion until, during the week before I saw him, he found that he could not walk naturally; he wanted to keep near the railing; he tried to run, and nearly fell down, “like a horse who stumbles.” After this experience he lost confidence and stability in walking. This motor disturbance increased. Sensation also was more affected; there was a partial loss of feeling. The right leg was the worse. There was no pain in the legs. Last night there was a new disagreeable feeling in the calf. There had been no fever.

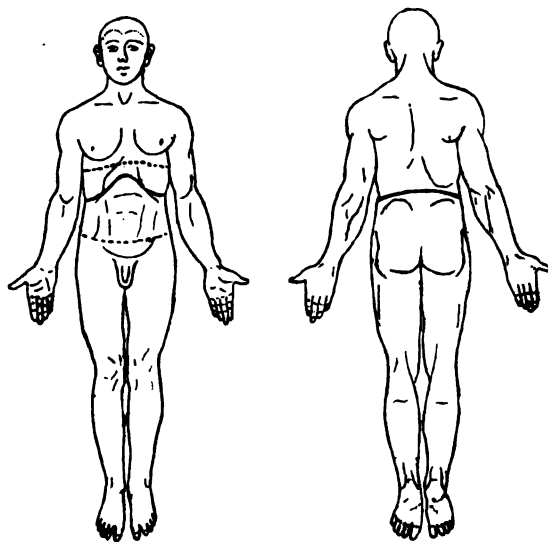
The bowels were rather inactive; micturition was normal; for some time he had to rise more nights and frequently during the day. During the last three days he has not been up nights; the call has been imperative during the daytime.

There was decided loss of motor power in the legs, more marked on the right. Knee-jerk was present on both sides, more marked on the left. When the legs were pricked there was strong reflex contraction of the muscles; cremaster reflex was strong. Between the dotted lines there was no reflex; above the upper dotted line the reflexes were normal. The sensory disturbance was found below the full line following, and about one and a half inches above the lower edge of the ribs in front, and passing across the back in nearly a straight line. Below the knees there was less diminution of the sense of touch than above. The back was straight, and there was no tenderness of the back on pressure. The patient grew steadily worse and died. There was no autopsy.

Judging from the disturbance of sensation and motion and the condition of the reflexes there was a lesion, probably inflammation, secondary to the primary lesion, of the spinal cord between the fourth and twelfth dorsal nerves. This lesion did not affect the whole thickness of the cord at the time I saw him, as there was still some motion and sensation in the legs, showing that some fibres in the cord had up to that time escaped.

What was the cause of this myelitis? There is no history of an exposure to cold or wet, which not infrequently causes myelitis.

There is no history of injury or fall, except the fall about Christmas. That was a rather severe jar of the whole body, but it was only from the sidewalk to the crossing-stone, added to the distance from the knees to the soles of the feet, a little more than two feet. For an interval of about twelve weeks after this fall there was an interval of good health with no noticeable symptoms.



It is probable that the jar of this fall produced a minute lesion of the cord, perhaps a slight hemorrhage, about which inflammation and degeneration were set up later. This was apparently the sequence of events in a case similar to this which I saw twenty years ago, and in which I obtained an autopsy. The active symptoms did not appear until four months after the fall.<sup>1</sup>

A man fell fifteen or twenty feet, striking on his hip. After a few days he was out at work. He did not remember having pain or any unusual sensation until about four months after the fall; he then was weak in the left leg, and soon had to use crutches. The weakness extended to the other leg and the arms; sensation was only slightly affected in the legs; there was no pain. There was wasting of the muscles.

The anterior cornua were chiefly affected. The white substance was also much altered, the nerve fibres having undergone degeneration.

One point of especial interest in these two cases is the delay in development of symptoms after the injury. In both there was a short time of discomfort immediately after the fall, then three or four months essentially free from symptoms, which then commenced and

<sup>1</sup> Transactions American Neurological Society, 1875.

steadily increased in severity until the fatal termination.

Serious organic changes were started by the fall, which at first were so slight as to give rise to no symptoms, but at length when they had advanced sufficiently their serious nature could no longer be overlooked. Had the morbid process come to a stand-still before it reached an advanced stage, if there had been a question of damages in a legal suit, it would have been a very difficult task to persuade a jury that the fall was the cause of the disability which did not appear until months later.

It is also of interest to notice that in one case the motor region was chiefly affected as shown by the symptoms and by the autopsy. In the other case the sensory symptoms were more prominent and appeared before the motor. Thus different regions of the cord were primarily affected first.

The nature of the lesion could only be guessed at. It must have been very insignificant at its origin, whether a slight hemorrhage or merely a disarrangement of elements which lead to a slow degenerative process I would not undertake to decide.

## Reports of Societies.

### THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

REGULAR Meeting, May 19, 1896, the President, DR. JAMES R. CHADWICK, in the chair.

DR. MALCOLM STORER read, by invitation, on

#### A STUDY OF AXIS ROTATION, WITH ESPECIAL REFERENCE TO THE TORSION OF OVARIAN TUMORS.<sup>1</sup>

DR. C. M. GREEN spoke of a case where there was a rapid increase in the size of the tumor after torsion of the pedicle had occurred. The patient had been examined by himself as well as by several other physicians, under ether, and no tumor at all detected. About four weeks later a large tumor was found rising up out of the pelvis. The case was operated on, and an ovarian cyst containing two quarts of dark chocolate-colored fluid removed. The assumption is that a tumor so small as to pass undetected was present at the first examination, and that this rapidly increased in size, partly on account of a hemorrhage due to the twisting of the pedicle.

DR. M. STORER said that the hemorrhage may alter the condition of the tumor so that growth takes place as well as distention by the blood. If the twisting takes place rapidly, the results may be very serious, with sloughing of the cyst; while if the rotation takes place slowly, adhesions form through which the circulation is kept up.

#### EXTRA-UTERINE PREGNANCY IN BOSTON IN THE LAST FIFTEEN YEARS.

DR. CHARLES W. TOWNSEND: As we all know, cases of extra-uterine pregnancy are reported not infrequently nowadays as occurring in Boston and vicinity. As short a time ago as 1889, when a single case was reported before the Obstetrical Society, most of the members present said they had never seen a case of this affection. At this time the Philadelphia medical

journals abounded with reports of extra-uterine pregnancies, and the conclusion was drawn fairly, either that women in this vicinity were not as prone to the trouble as the Philadelphians, which seemed absurd, or that cases did occur, but that physicians here failed to recognize them. Since that time we have apparently waked up to the diagnosis of extra-uterine pregnancy as can be seen by examining the number of cases reported in the *Boston Medical and Surgical Journal*. This is, of course, but an imperfect method of getting at the number of cases, but will serve to give a general idea.

In 1880, 1881 and 1882 there are no cases of extra-uterine pregnancy recorded in the JOURNAL.

1883, 2 cases, both fatal; neither operated on, and 1 reported before this Society.

1884, 2 cases; 1 recovered, 1 fatal; neither operated on.

1885, 0 case.

1886, 2 cases; 1 recovered, 1 fatal; neither operated on.

1887, 1 case; recovered; not operated on.

1888, 0 case.

1889, 3 cases; 2 recovered, 1 died; the fatal case and one that recovered, without operation; the other recovery followed operation, a case reported before this Society by Dr. G. Haven.

1890, 0 case.

1891, 4 cases; 2 recovered, 2 fatal; all, with the exception of one of the fatal cases, operated on.

1892, 2 cases; both recovered after operation.

1893, 26 cases; 23 recovered after operation, 3 died without operation.

1894, 25 cases; 24 recovered with operation, 1 died without operation.

1895, 5 cases; 4 recovered, 1 died; all operated on.

The falling off in numbers reported in the last year is apparently due to the triteness of the subject, not to a decrease in actual numbers of cases. To sum up this imperfect record, we find no cases of extra-uterine pregnancy reported from 1880 till 1883; since then 72 cases, 29 of these before the Obstetrical Society of Boston. Of 56 that were operated on, only 2 died, a mortality of 3.5 per cent.; while of 14 not operated on, 10 died.

DR. W. L. BURRAGE said that he had operated on eight cases of extra-uterine pregnancy, all of which had recovered. All but one of these were proved to be cases of this affection by the pathologist. The exception was a long neglected case where the presence of pus obscured the diagnosis. He had seen eight others operated on; and with the addition of three more, there was a total of 19 cases in all of extra-uterine pregnancy that had come under his observation.

DR. B. E. COTTING said that when he was a student, some fifty-nine years ago, the professor spoke of extra-uterine pregnancy as a curiosity, but still as a possibility. There was then a case in the neighborhood of Boston that had gone on to full term. He believed that diseases came in waves, and that extra-uterine pregnancy would become as rare again as it was fifty years ago.

DR. F. H. DAVENPORT spoke of one case of his where the symptoms were obscure, but suggested extra-uterine pregnancy. Celiotomy was performed, and a small tumor was found in the right tube, not larger than an English walnut. As the tube seemed healthy about it, he made a longitudinal incision and shelled out a brownish-looking mass, and then sutured the rent in the tube with fine silk. Dr. Whitney examined it, and pronounced it an extra-uterine pregnancy. The patient made a good recovery.

DR. J. R. CHADWICK said that he thought the present frequency of the disease was easily explained on the ground of more accurate diagnosis at the present day. We rarely hear of hematocele pure and simple now, we find that most of these are cases of extra-uterine pregnancy; just as we do not have inflammation of the bowels now, but appendicitis. A large

<sup>1</sup> See page 457 of the Journal.

percentage, perhaps 70 per cent., of cases of extra-uterine pregnancy result in recovery without the growth of the fetus or need of an operation. He has had himself some 15 or 20 cases of ectopic gestation. The first went on to full term, and the remains of the fetus were extracted by the vagina ten years afterwards. Another case went on to full time, and then remained quiescent for three years. A normal pregnancy then occurred, and Dr. Chadwick decided to remove the dead extra-uterine fetus. This he accomplished quickly and easily, as there were no adhesions above the brim of the pelvis. The patient went on to full term, and has had a normal pregnancy since.

DR. C. M. GREEN showed an

#### OBSTETRICAL RECORD-BOOK

with printed slips to be filled out at the bedside.

### THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

TENTH ANNUAL MEETING, ATLANTIC CITY, N. J.,  
JUNE 2 and 3, 1896.

(Concluded from No. 18, p. 449.)

DR. J. P. TUTTLE, of New York, described

#### TWO CASES OF URETHRAL CHANCRE, WITH UNUSUAL SECONDARY SYMPTOMS.

In the first case the chancre was situated within the urethra about three-quarters of an inch back from the meatus. About ten days after its appearance the patient complained of general malaise, his temperature rose to 104° F., and he developed an eruption almost typical of measles, excepting that it was largely confined to the trunk and upper extremities and had the copper-colored tinge suggestive of syphilis. There was no bronchial irritation. Later, distinct mucous patches appeared on both tonsils. The eruption lasted about two weeks. The patient improved under specific treatment.

The second case reported was one of urethral chancre followed by muscular pains, which were worse at night and were so severe in character that hypodermic injections of morphine were necessary to allay them. This patient also developed an endocarditis and subsequently a meningitis, from the effects of which he has not yet recovered. Dr. Tuttle said he was still in doubt as to whether the muscular pains and the cardiac and nervous symptoms were specific in origin, or due to rheumatism or some other constitutional diathesis.

#### CLINICAL AND PATHOLOGICAL NOTES ON SYPHILIS.

DR. JOHN A. FORDYCE, of New York, read a paper on this subject. The first portion of the paper was devoted to a description of the pathological appearance of the lesions met with in the various stages of syphilis. The second portion was devoted to the subject of *myositis syphilitica*. The author stated that while involvement of the muscles in syphilis is by no means of frequent occurrence, it is met with both in the early and late stages of the disease. Before or during the outbreak of the early eruption, general or localized muscular pains not infrequently occur which simulate rheumatism and interfere to some extent with the movements of the implicated muscles. These muscular pains are transient in duration; produce, as a rule, no

evident change in the parts; and readily disappear under specific treatment. In the late secondary or tertiary periods of the disease a diffuse or gummatous myositis has been observed. Both of these forms impair the functional activity of the muscles and lead at times to permanent changes in the parts. The disease seems to show a predilection for certain muscles or groups of muscles, among which may be mentioned the biceps, the flexors of the forearms, the masseter, the sphincter ani externus, the deltoid and the sterno-cleido-mastoid. In diffuse syphilitic myositis the first changes seem to take place in the blood-vessels of the interfibrillary connective tissue, the muscular substance being affected secondarily. In neglected cases, or where the cause is not recognized, atrophy may occur and a complete cure become impossible. A correct diagnosis and early treatment insures, as a rule, a good prognosis.

The speaker then reported a case of syphilitic myositis occurring in the second stage of the disease; in this case the left sterno-cleido-mastoid was affected. The case occurred in the practice of Dr. P. A. Morrow. Another case was reported illustrating the gummatous type of the disease; in that instance also the sterno-mastoid muscle was involved. In the concluding portion of his paper, Dr. Fordyce reported in detail an interesting case of brain syphilis. Numerous photographs were exhibited in connection with the various subjects discussed in the paper.

DR. TAYLOR said that Dr. Fordyce's work in the pathology of syphilitic lesions, as well as his description of the muscular lesions of syphilis are entirely in accord with our classical knowledge of the disease. The clinical cases reported, particularly that of brain syphilis, were very interesting.

DR. POST said that during the past year he had seen two or three cases of myositis which clinically might be syphilitic, but which occurred in individuals in whom no history of that disease was obtainable, nor were there any other symptoms pointing to it.

#### CLINICAL AND PATHOLOGICAL REPORT OF A CASE OF CEREBRAL SYPHILIS,

by DRS. GEORGE E. BREWER and PEARCE BAILEY.

Male, age twenty-five, single. Was first seen in the autumn of 1892. Family history negative. Aside from a moderate amount of neurasthenia the patient had always enjoyed fair health. At the time of his first visit he complained of headache, sore throat, deafness, ringing in the ears and general malaise. Upon examination, an indurated ulcer was found on the penis, with enlarged inguinal, cervical and epitrochlear glands. There was a well-marked macular syphilide on the chest and abdomen; mucous patches were found on the tongue, lips and tonsils; there was an otitis media on the left side. Under the use of inunctions, which were continued for several months, followed by the protoiodide of mercury given internally, rapid improvement in all his symptoms took place and he returned to his home in the South, where for a period of eighteen or twenty months he was under the care of another physician, who prescribed mixed treatment. During all this period he remained well and was free from noticeable manifestations of the disease. About three and one-half years after the date of the original infection he again came under observation, complaining of severe occipital headache, radiating down the back, and accompanied by occasional

attacks of vertigo. The pain was more severe at night, and was sometimes associated with nausea, vomiting and extreme restlessness. Examination at this time revealed slight enlargement of the left pupil, beginning double optic neuritis, and a marked increase in all reflexes: no paralysis; no foot clonus; no changes in sensation; no loss of sphincter control. Under mercurial inunctions and increasing doses of potassium iodide, rapid improvement in all his symptoms occurred. On April 20th, after five days of freedom from headache and all abnormal head symptoms, he was suddenly seized with loss of consciousness and an epileptiform convulsion, involving all the extremities. Ten hours later another slight convulsion occurred. He became restless, excited and mildly maniacal. The temperature, which up to the present time had been normal, now rose gradually to 104° F. The pulse remained below 100, and was firm and regular. There was no embarrassment of respiration. In spite of vigorous antisypilitic treatment, he gradually sank into a comatose condition and died on May 6th.

At the autopsy, made a few hours after death, the pia appeared normal over the convolutions, but at the base of the brain it was opaque and thickened. At the superior termination of the basilar artery, and enclosed by thickened meshes of the pia, was a round tumor, 75 millimetres in diameter. This tumor lay between the third nerves, slightly indenting the pons, on the under surface of which it pressed, and the basilar artery communicated with it. The basilar artery was filled with a red thrombus throughout its entire extent, and the upper portion of the vertebrals and part of the posterior communicating arteries were likewise occluded. There was no softening. Microscopical examination showed an endarteritis of some of the large arteries at the base of the brain and an aneurismal dilatation of the basilar artery. The tumor referred to above was formed by the dilatation of this artery, the walls of which were partially destroyed.

DR. BAILEY, in discussing the paper, referred to the rarity of cases of acute cerebral syphilis which afford an opportunity for pathological investigation. The pathology of cerebral syphilis shows that the blood-vessels are the most common seat of the lesions in fatal cases. It is not definitely known in which coat of the vessel the morbid process begins, but the intima shows the most marked changes. It is impossible to distinguish, histologically, between specific endarteritis and endarteritis due to atheroma. The prognosis of acute cerebral syphilis depends upon the predominating anatomical character of the inflammation.

#### SECOND DAY.

#### OPERATIVE INTERFERENCE IN AGGRAVATED INSTANCES OF SEMINAL VESICULITIS.

DR. EUGENE FULLER, of New York, read a paper on this subject. The following conclusions were drawn by the writer:

(1) Chronic, non-tubercular cases of seminal vesiculitis can be successfully and satisfactorily treated by extirpation of the sac.

(2) Such an extreme measure, however, should be reserved for extreme cases associated with serious or severe subjective symptoms.

(3) Before resorting to extirpation, the patient should have the benefit of the stripping treatment, if

his circumstances allow it, and extirpation should be advised only in case the stripping treatment proves unsatisfactory.

(4) In performing the operation, the Kraske incision is the method advisable.

(5) The subjective symptoms associated with the seminal vesiculitis ought to disappear as a result of the operation.

(6) With but one seminal vesicle, provided it is healthy, the sexual function is strong and satisfactory.

(7) A subacute epididymitis is to be expected after the operation in connection with the testicle corresponding to the vesicle which has been removed. The testicle itself, however, does not subsequently atrophy.

DR. GEORGE CHISHORE, of San Francisco, said he fully agreed with the statement made by Dr. Fuller that before undertaking any operation on the prostate or seminal vesicles, tuberculosis of that region should, if possible, be excluded. The speaker said he has thus far never resorted to operative measures in the treatment of seminal vesiculitis; in a number of cases, however, he has seen marked benefit follow stripping the vesicle, after the manner suggested by Dr. Fuller.

DR. GARDNER W. ALLEN, of Boston, exhibited a specimen composed of inspissated mucus which was passed during urination, and probably had its origin in one of the seminal vesicles.

DR. JOHN P. BRYSON, of St. Louis, said he agreed with the statement made by Dr. Fuller that with the Zuckerkandl incision the field of operation is so limited that it is difficult to control the severe hemorrhage which is apt to occur, while the rectum or bladder or even the deep urethra is easily injured.

DR. J. WILLIAM WHITE, of Philadelphia, reported a case of seminal vesiculitis of long standing which was entirely cured by the stripping method of treatment. In tubercular cases, the speaker said, he confined himself to hygienic treatment, which is probably all we can do for them.

DR. A. T. CABOT, of Boston, said he was interested to learn how easily Dr. Fuller had been able to get at the seminal vesicles by means of the Kraske incision.

DR. FULLER, in closing the discussion, said he agreed with Dr. White that hygienic treatment is the only resort we have in cases of tubercular origin; by operating in such a case we are apt to light up latent foci there and induce a rapid dissemination of the disease.

#### RENAL TUBERCULOSIS.

DR. F. TILDEN BROWN, of New York, read a paper with this title. He stated that we know of but three ways in which the tubercle bacilli may gain access to the kidney. These are:

(1) By the blood.

(2) By their multiplication and the gradual development of tuberculous granulations along the ureter from the bladder—ascending urinary infection.

(3) By an extension of the disease from a neighboring or remote organ.

A summary of the different symptoms and evidence which have been advanced as in any way conducive to the diagnosis of renal tuberculosis, whether vascular or ascending in origin, will be fairly repre-

sented by the following: The existence of a tumor corresponding more or less accurately to the position of the kidney; such a tumor may or may not be painful to palpation, or it may be the seat of spontaneous pain, often intermittent. The tumor may be a centre from which pains radiate to different parts of the abdomen, to the lumbar spine, down the groin, into the outer side of the thigh or even into the opposite and healthy kidney. Again, without the presence of a tumor, or an appreciable enlargement of the kidney, some of the following symptoms, which are mentioned in the order of their importance, may be noticed: pallor and emaciation; edema of the feet and legs; reaction to the injection of tuberculin; albuminuria; moderate pyrexia; night-sweats; dysuria; pyuria, with acid urine; hematuria, with acid urine; polyuria; frequency of urination; turbid urine seen by the cystoscope issuing from a ureter; the finding of tubercle bacilli in that urine which is known to come from one or the other kidney, as when obtained by ureteral catheterization. The only micro-organism which can possibly lead us astray in the microscopic diagnosis is the smegma bacillus. The morphology of this parasite, as well as its similar reaction to the ordinary staining method for tubercle bacillus, can, when present, easily be misleading unless generous alcoholic decolorization be employed.

The symptomatology of renal tuberculosis is very important, because the physician who can make a positive diagnosis in a comparatively early stage of the disease renders more valuable service than does the surgeon who at a much later day performs a successful nephrectomy.

As regards the treatment of patients with renal tuberculosis, the rich will, as a rule, find their best resource in change of climate, careful attention to hygienic details, selected alimentation, and medicinal invigoration of the system. The poor, during the early stage of the disease, will receive greatest benefit from a treatment which approximates as nearly as possible that advocated for their more fortunate fellow-sufferers. Theoretically, the earliest manifestation of a localized renal tuberculosis would be best treated by a radical surgical operation, but practical experience has pretty clearly shown that the temporary impairment of vitality attendant upon nephrectomy is of more disastrous import than is the presence of an early tuberculous lesion and the bacilli causing it. On the other hand, if the lesion in the kidney is recognized comparatively early, it can by other than surgical measures, in many cases, be rendered so inactive as to approximate a cure. In exceptional cases, when the symptoms demand it, nephrectomy is not only legitimate, but strongly indicated.

DR. FRANCIS S. WATSON, of Boston, referred to the intermittence of the symptoms in many cases of renal tuberculosis. He also called attention to the value of resection or partial nephrectomy in some instances, and reported a case in which he successfully removed the lower half of one kidney, which was involved by tuberculosis.

DR. WHITE, in discussing the relative value of the lumbar and abdominal incision for nephrectomy, said that until last year he was a strong advocate of the former. He was induced to alter his opinion because the lumbar incision does not give the operator the necessary space. The operation of partial resection suggested by Dr. Watson seemed to the speaker a

very formidable one — more so than complete nephrectomy.

DR. CHISMORE said that Dr. Brown, in his paper, spoke of catheterizing the ureters in order to discover the origin of the tubercle bacilli. Such a procedure, Dr. Chismore said, or even the more simple one of cystoscopy, should be resorted to with considerable hesitation in any case where tuberculosis is suspected, as we are apt to aggravate the symptoms. When we consider the fact that in many cases of renal tuberculosis the origin of the trouble is associated with traumatism, how much more likely it is that any trauma inflicted afterwards will aggravate the condition and tend to disseminate the disease.

DR. JAMES BELL, of Montreal, referred to the importance of determining the condition of the opposite kidney before operating, in cases of renal tuberculosis. In performing nephrectomy he prefers the abdominal incision, because it may throw some light on the condition of the opposite kidney, and also because it enables one to secure the pedicle with more confidence than does the lumbar incision in some instances.

DR. BEYSON said he had come to the conclusion that there is no such thing as a symptomless renal tuberculosis. Before undertaking any operative measures in these cases we must bear in mind how frequently this condition is only a local manifestation of a general disease. He agreed with Dr. White that complete nephrectomy is preferable to resection, as suggested by Dr. Watson.

DR. N. B. CARSON, of St. Louis, referred to the danger of interfering in localized tubercular trouble. To illustrate this, he reported the case of a young woman who for many years had a localized tubercular lesion in one knee-joint. She entered a hospital, where the joint was opened and curetted; soon afterwards it became necessary to amputate the leg above the knee, and about six weeks later the patient died, presumably from acute tuberculosis.

DR. BROWN, in closing the discussion, said that local interference should only be undertaken in renal tuberculosis when it is absolutely called for, and then only with the greatest care. He expressed the opinion that if there are adhesions, the abdominal, intra-peritoneal route is preferable; otherwise, he is inclined to favor the lumbar route. He did not think the abdominal incision would be of much service in determining the condition of the opposite kidney.

#### SOME FORMS OF NON-OBSTRUCTIVE ISCHURIA.

DR. ALEXANDER W. STEIN, of New York, read a paper on this subject. He stated that inability to empty the bladder may be due to —

(1) Atony of its muscular parietes. (a) Deficient contractile power of the so-called detrusor from overstretching of its fibres; duration usually temporary. (b) Loss of power of detrusor from atrophy and fatty metamorphosis; duration permanent.

(2) Neurotic retention. (a) Deficient power of detrusor concomitant upon some psychic or functional disturbance of the nerve centres; duration temporary. (b) Paresis or cystoplegia from organic derangement of the nerve centres; duration usually permanent.

(3) Spastic or reflex retention. Irritation from some neighboring organ; disappears with the cause that induces it.

The degree of atony resulting from over-distention of the bladder may vary from a slight and temporary



impairment in the expulsive power of the organ to a complete and permanent inability to empty its contents, depending upon the age and health of the person, the condition of the bladder, the degree of distention and the length of time the detrusor fibres have been upon the stretch. In the aged and feeble this condition is not uncommon, and permanent disability of the viscus often results from a single inattention to its behests. In the young and robust atony is much less frequent, and the bladder once relieved of its burden regains its functional activity.

In connection with this paper Dr. Stein reported a number of cases of atony of the bladder coming under his observation.

DR. JOHN P. BRYSON, of St. Louis, read a paper entitled

#### TWO CASES OF PROSTATECTOMY: PROSTATECTOMY ON A MONORCHID.

The first case reported was one of prostatic overgrowth in a man eighty years of age, who, forty years before, had had an attack of mumps complicated by an orchitis which completely destroyed the left testis. The right testis was normal in size and feel. Prostatectomy was performed on July 18, 1895. The operation disclosed the fact that the left lobe of the prostate (which was the side corresponding to the atrophied testis) was larger than its fellow. The largest mass of prostatic tissue was removed from the left side.

The second case reported was one where prostatectomy was done a year after double castration for prostatic overgrowth. The patient was a man aged sixty-four years. Double castration was performed on April 8, 1895. On the sixth day after the operation the patient reported that he felt better. He continued to use the catheter until the end of June, when there was only a small quantity of residual urine. He gradually regained the power of voluntary urination, and was no longer troubled with nocturnal frequency. The bladder was irrigated once daily, at bedtime. On January 20, 1896, he had an attack of complete retention, and he again became entirely dependent upon his catheter. An examination of the prostate made on April 30, 1896, failed to reveal any change in its size, shape or consistency. The urine became decidedly purulent; the walls of the bladder were inflamed and showed numerous small pockets, one of which contained a calculus. On May 1, 1896, suprapubic cystotomy was performed and the calculus removed, together with a large mass of prostatic tissue. The patient made a satisfactory recovery from the operation; but on May 26th he died suddenly, death being due to a mitral lesion. In that case the prostate was not reduced in size by the double castration done twelve months previously, and a microscopical examination of it failed to show any evidence of degenerative changes.

In connection with his paper, Dr. Bryson exhibited a number of gross and microscopical specimens.

DR. WHITE said the case reported by Dr. Bryson forms a valuable addition to the knowledge we are gradually acquiring as to the certainty or uncertainty of the result of double castration for enlarged prostate. When he introduced this operation he did so cautiously, and with the hope that it would not be indiscriminately performed. We must study our cases carefully, and decide which are favorable for castration and which for prostatectomy. The speaker expressed the opinion

that the operation of double castration for enlarged prostate had come to stay, and that there would always be cases suitable for it.

DR. CABOT said that in the beginning, at least, the operation of double castration for prostatic overgrowth was performed too promiscuously, in spite of the fair manner in which Dr. White had presented the subject. It is very important that we should arrive as soon as possible at a clear understanding of the fact that the operation is not a trivial one, as we all at first believed. The speaker expressed the opinion that the mortality is due to the condition we have to deal with, and the question in a given case is, which operation will relieve the condition with the least added danger, castration or prostatectomy? The drainage instituted after a prostatectomy immediately relieves the bladder and the kidneys, while after castration the relief is more gradual. The kidneys may stand the strain or they may not; and this is probably the chief factor in the fatal cases that have occurred. Another factor is that the testes no doubt exert some tonic influence on the nervous system, and the cases of mania that have been reported following the removal of these organs are probably due to this fact. Dr. Cabot expressed the opinion that shrinkage of the prostate after double castration is an established fact. It is difficult to understand what changes occur in the organ, as the microscopical examinations thus far made have proved very unsatisfactory.

DR. FULLER said it would be interesting to ascertain just what constitutes prostatic hypertrophy. He has often noticed that in some cases the prostatic tissue is enucleated very readily, while in others it is a difficult matter to remove it.

DR. BELL said that the more we discuss this subject, the more clearly are we brought face to face with the fact that the immediate cause of death in all of these prostatic patients, no matter which operation is performed, is a form of toxemia. This toxemia, which is probably responsible for the mental symptoms and the mortality, is something which we know very little about.

#### DURATION OF ACUTE GONORRHEA.

DR. H. M. CHRISTIAN, of Philadelphia, read a paper on this subject. His conclusions were as follows:

- (1) Gonorrhea is a more prolonged and serious disease than it is generally considered.
- (2) In two-thirds of all uncomplicated cases, the period of time necessary to effect a cure is from six to ten weeks.
- (3) In that small proportion of cases where the entire urethra does not become involved, the disease being confined to the anterior urethra, we can expect a complete recovery in four weeks.
- (4) It is important to make an examination of the urethra before pronouncing a gonorrhea as positively cured.

The following resolutions were unanimously adopted by the Association:

*Whereas*, certain attempts are being made to obtain legislation prohibiting vivisection in experimental pathology and physiology:

*Resolved*, that the American Association of Genito-Urinary Surgeons hereby places itself on record as pronouncing such efforts to be unwise and unscientific, since the abolition of vivisection would result in absolute paralysis of one branch of progressive and scientific medicine.

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### SERUM DIAGNOSIS OF TYPHOID FEVER.

A RECENT article by Dr. Wyatt Johnson, bacteriologist of the Board of Health of the Province of Quebec,<sup>1</sup> brings before American readers for the first time an *accurate* and satisfactory account of a new method of diagnosis in typhoid fever. A short abstract of a French article in the *Medical News* for October 17th, contained gross inaccuracies.

The serum diagnosis of typhoid fever is one of the fruits of the investigations of Pfeiffer and others into the nature of acquired immunity to disease. "Pfeiffer's reaction" has been known to bacteriologists for about two years, having been first announced in May, 1894. Pfeiffer discovered that if the serum of an animal previously rendered immune to the cholera vibrio were added to a fresh culture of cholera vibrios in bouillon, a peculiar effect was produced upon the vibrios. According to Pfeiffer, this effect could not be produced on any other species of vibrio or with any substance except the serum of animals immunized against the cholera vibrio. Further, the reaction (presently to be described) he found to take place only within some living animal. In his experiments the cholera vibrios mixed with the serum of another animal immune to cholera were injected into the peritoneal cavity of a guinea-pig. Examination of the peritoneal fluid twenty to sixty minutes later showed that the vibrios had lost their motility and been transformed into spherical, highly-refractile cocci-like bodies, later losing their outlines and staining properties, and finally being dissolved altogether in the peritoneal fluid.

Pfeiffer considered this a specific reaction, that is, one occurring only in case a culture of genuine cholera vibrios is used, and his interest in it was as a means of finding out whether a given vibrio was really the *cholera* vibrio or some other of the numerous allied species (vibrio *Berolinensis*, etc.). It is now

generally admitted to be a reaction of great value, though Grüber and others doubt whether *all* other kinds of vibrio can be excluded by the test.

Later (November, 1894), Pfeiffer applied a similar test to doubtful cultures of the *typhoid* bacillus, and found that it could be distinguished from the colon bacillus and all other bacteria by this method.

In 1895 Grüber announced that the same test could be made in a test-tube without using the peritoneum of a guinea-pig at all. This fact had been previously observed by Issaeff and also by Bordet; but apparently they made no practical use of their observations.

The test-tube reaction as described by Grüber is identical with that now used, not only for identifying a given bacillus, but also for identifying a given disease. Grüber added to a bouillon culture of a bacillus suspected of being the typhoid bacillus a few drops of the serum of an animal immunized against the peritonitis ordinarily set up in animals by intra-peritoneal injections of Eberth's bacillus. If the suspected culture was *not* one of typhoid bacilli, no change took place. If, on the other hand, it *was* a typhoid culture, the bacilli became agglutinated in clumps and lost their motility. Eventually these clumps become so large that they sink to the bottom as a flocculent sediment, leaving the supernatant fluid clear.

It remained for Widal,<sup>2</sup> a French observer, to apply the same test *backwards*, starting with a culture surely one of typhoid bacilli and investigating the serum of patients sick with a fever suspected of being typhoid. Pfeiffer had already noted that the serum of persons convalescent from typhoid reacted upon typhoid bacilli exactly as did the serum of animals immunized against the same bacillus. He concluded that the same anti-toxic substance was present in the typhoid convalescents and in the immunized animals.

Widal seized this hint, and has worked out a method by which the diagnosis of typhoid fever *in the later weeks* can be materially assisted. He has been confirmed by every one of the seventeen different observers who have verified his results. The method has been tested in at least 200 cases in all.

Widal has suggested three methods of performing the test, each simpler and more easily available than the last. At first he drew blood from a vein of the forearm with a sterile syringe, decanted the serum, and after mixing with ten to fifteen times its volume of fresh bouillon culture of typhoid bacilli, left the mixture twenty-four hours in the thermostat at 37° C. Later he found that he could get equally good results by using a few drops of blood taken from the ear or finger in the ordinary way. A single drop of the serum of this blood is added to ten to fifteen drops of the bouillon culture, and then a drop of this mixture is at once examined between a slide and cover-glass with a one-twelfth oil immersion lens. If the case be one of typhoid, the bacilli clump together as above described within from two to sixty minutes. No other

<sup>1</sup> New York Medical Journal, October 31, 1896.

<sup>2</sup> La Semaine Médicale, June 26, 1896.

disease has been thus far found which gives this clump reaction.

Widal's next discovery was that a few drops of blood dried on glass or paper would answer as well as the fresh blood serum, provided the dried blood is mixed with a few drops of water when we are ready to make the test. Such dried specimens can be sent through the mails and will keep their power and produce the reaction for at least six months.

Dr. Wyatt Johnson, of Montreal, has carried out this method with entire success, and the Board of Health of the Province of Quebec now announces (September, 1896) that it will furnish a diagnosis free to any physician who will send a few drops of blood dried on paper.

In the majority of cases this serum reaction does not appear earlier than the rose spots and diazo reaction; on the other hand, it persists for several weeks (at least) after defervescence.

It shows considerable qualitative variations in different cases, and grows more marked in the later weeks of the disease. Possibly it may turn out to be of prognostic as well as diagnostic significance.

It is present in the milk, in the tears, in the serum from a blister, in the peritoneal and pericardial fluid, and the fluid of edema, but not in the gastric juice, saliva, or bile of typhoid patients.

From the evidence before us we think it reasonably certain that we have in Widal's serum reaction a valuable method of diagnosis in the later weeks of typhoid, and it seems not impossible that some similar method may be applied to the diagnosis of other diseases.

#### PROGRESS AT CRAIG COLONY FOR EPILEPTICS SINCE THE OPENING.

THIS has been the crucial year in the evolution of Craig Colony at Sonyea, N. Y. All the buildings that were in the Shaker settlement at the time of its purchase by the State for dependent epileptics, have been thoroughly remodelled and put into complete order for the reception of patients. A perfect system of water-supply, sewerage, plumbing, heating and electric lighting has been installed, and on February 1, 1896, the colony was informally opened for patients. One hundred and forty-nine patients have been received thus far, and as soon as the hospital building, now in course of construction, is completed and the west group of buildings heated, the accommodations of the plant, as it now stands, will be ready for a population of over two hundred epileptics.

In spite of the shortness of the time now elapsed since the opening of the colony, only eight months, two very important facts have become evident: first, that remarkable improvement has taken place in the condition of the patients admitted; and, second, that the economic success of the scheme is assured.

As to the effect of colony life on the patients, it may be said that nearly every case has gained in weight and in general health. In all cases, the epi-

leptic seizures have diminished in frequency to a marked degree, and in some instances, this has been even extraordinary. The expression of the inmates has altered so that instead of the dull, hopeless look of the almshouse epileptic, one sees on all sides happy faces in which intelligence and hope are being re-awakened.

The school has been successfully started for fifteen or twenty of each sex. Much of the printing of the colony is now done by two or three epileptics in the colony's own printing office. Carpentry, sewing, painting, etc., are being carried on by the patients. They have their own epileptic blacksmith. Naturally the great work of the inmates of both sexes is in the field and garden. Eighty-three per cent. of the males and seventy-six per cent. of the females have given eight hours daily labor. This labor has had a great effect upon the income of the colony, demonstrating the economical value of the scheme.

From the report of the superintendent and steward for the year ending September 30, 1896, we learn that the products of the farm and garden for the year 1896 amounted to \$14,280.20. The cost of maintenance of patients from the date of opening, February 1, 1896, to October 1, 1896, a period of eight months, was \$28,258.24. The colony has therefore actually produced already one-half of the cost of maintenance.

Appropriations are asked for this year to increase the productivity of the agricultural department especially, because upon this the economic success of the scheme depends so largely.

At the same time, there is most urgent need for accommodations for the hundreds of patients seeking admission. There are nearly a thousand patients still a public charge in New York almshouses, insane asylums and various charitable institutions, who need to be provided for at Craig Colony. The managers will ask the Legislature at Albany to provide, this coming year, dormitory accommodations for at least three hundred more patients.

#### MEDICAL NOTES.

**CHANGE OF NAME.** — The editors of *Mathews' Medical Quarterly* announce that with the January issue of that publication its name will be changed to *Mathews' Quarterly Journal of Rectal and Gastro-Intestinal Diseases*.

**MICROPHOBIA.** — A certain crazy Roman prince, says the *Lyon Médical*, lives in such terror of microbes that he has all his trousers provided with oiled silk pockets. As soon as he has shaken hands with any one, he plunges his own hand into one of these pockets, and drowns the microbes which may have been transferred to him by contact.

**TRAINED NURSES IN CALIFORNIA.** — The *Medical Record* states that many trained nurses from Philadelphia and Baltimore have recently been induced to go out to San Diego and other places in Southern Cali-

fornia on the representation that they could find employment there that would pay them twenty to twenty-five dollars a week. On arriving there, however, they have found that there was no work for them and that, even if there were, they could not obtain any such remuneration for their services, and they have in many cases had to send to their friends in the East for money to enable them to return home.

**MODESTY AND MEDICAL CO-EDUCATION.**—Mr. Jonathan Hutchinson has been obliged to exclude female medical students from his clinical afternoons, owing to the unwillingness of male patients to undress before them. Would it not be possible to protect the patients by screens or some such device, as is done in gynecological clinics, and avoid the necessity of excluding women?

**THREE SUCCESSFUL CÆSAREAN SECTIONS UPON THE SAME WOMAN.**—C. N. Van de Poll, M.D., of Amsterdam, reports in the *Centralblatt für Gynäkologie*, 1896, No. 21, this unique case: The first two sections were performed by the late Professor Van der Mey, and reported by him several years ago. Her pelvis was a generally contracted rachitic one, and her first three pregnancies resulted in the death of the child. She was told that a Cæsarean section would be necessary if she became pregnant again and wished a living child. Van der Mey performed this twice, each time delivering a healthy child. Seven years after the second one Van de Poll delivered the third child, but was forced to do a Porro on account of the broad, firm adhesions between the lower uterine wall and the abdominal wall. This child also lived and the woman is now perfectly well.

**THE "OFFICIAL" TRAIN TO THE PAN-AMERICAN MEDICAL CONGRESS.**—Dr. Charles A. L. Reed, of Cincinnati, has issued a circular of information in which he says that, inasmuch as the rate to the City of Mexico on the occasion of the meeting of the Pan-American Medical Congress is open to the public, a very large number of people are expected to avail themselves of it. A number of excursions on the popular plan will no doubt be arranged, some of them by persons unfamiliar with the business, and will in all probability be patronized to the point of discomfort. It was in anticipation of this that the regular committee on transportation arranged with Mr. Beau Campbell, of the American Tourists' Association, for a handsomely equipped "official" train of Pullman cars to be personally conducted by himself for the exclusive use of delegates, their families and their friends. This is the only "official" train, and it will leave Cincinnati on Tuesday, November 10th, at 9 A. M. Physicians are asked to bear this in mind, that they may not be misled by representatives of mere excursion enterprises, and thus be deprived of the opportunity of travelling with their friends.

BOSTON.

**THE TUFTS MEDICAL SCHOOL.**—The First Free Baptist Church property on the corner of Shawmut

Avenue and Rutland Street has been purchased by the trustees of Tufts College, to be used as a medical school.

NEW YORK.

**ANNUAL MEETING OF THE COUNTY MEDICAL SOCIETY.**—At the annual meeting of the Medical Society of the County of New York, the following officers were elected for the ensuing year: President, Dr. Landon Carter Gray; First Vice-President, Dr. Robert A. Murray; Second Vice-President, Dr. Nathan E. Brill; Drs. Charles H. Avery and William E. Bullard were re-elected Secretary and Assistant Secretary respectively, and Dr. John P. Warren, Treasurer.

**A YOUNG MARRIED COUPLE.**—The youngest married couple that was ever received at the emigrant station in New York recently landed at Ellis Island. The husband was fifteen years of age, and the wife thirteen, and they were Syrians from Beirut.

**THE ESCAPED LEPERS.**—Two of the five lepers confined in seclusion on North Brother Island, under the care of the Health Department, made their escape on October 29th. They were both Chinamen and as one of them was possessed of considerable means, it is supposed that he had probably made arrangements, by correspondence, for their transportation to their native country. At the latest accounts neither the Police nor Health Departments had found any trace of them. Of the remaining lepers at North Brother Island, two are negroes and one a German.

**DEATH OF DR. A. J. MIXWELL.**—Dr. Aaron J. Mixwell, of Rye, Westchester County, who was the candidate of the National Democratic Party for coroner in his district, was struck and instantly killed by an express train on the New York, New Haven and Hartford Railroad at Mamaroneck station on October 31st. Dr. Mixwell belonged to one of the oldest families in Westchester County, of which he was a native.

## Miscellany.

### AMBULANCES IN ENGLAND.

A WRITER in the *Nineteenth Century* for October, on the subject of "Horse Ambulances," gives an interesting account of their origin at Bellevue Hospital in New York, of their development all over the United States, and their adoption in Vienna and Paris. He evidently has not heard that there are any such vehicles in England, for he blames the English "for having neglected for so long an example set them by far younger cities than their own."

For this the *Lancet* (October 24th) takes him to task. The editor feels called upon to correct the wrong impression conveyed by his statements, and directs attention to the fact that the English towns really have ambulances, although he grants that they are far behind the Americans in this respect. He urges in mitigation that their hospitals are "pure charities," and very rarely have funds available for outside purposes.

The Northern Hospital in Liverpool has a horse ambulance, and was the first hospital in England to adopt this system. Two other hospitals in Liverpool also have ambulances. It is a little strange that in a city of the size of Birmingham there is only one ambulance, which is used to convey patients from the hospital to the convalescent home, and is rarely available for emergencies. The Leeds Infirmary, said to be "the best equipped in England," has actually two ambulances, kept at the headquarters of the fire brigade, which are about one hundred yards from the hospital, and by which the horses are provided. A start is made within two or three minutes after the receipt of a call.

Although, as will be seen from the *Lancet's* statement, England is not entirely without horse ambulances, when a city of the size of Liverpool has only three, Birmingham only one, and other large cities none, it cannot be said that the English have shown any great amount of enterprise in the adoption of modern methods of transporting the sick and wounded. One would have supposed that in that rich and thickly inhabited island, money enough could be found to provide the hospitals with so important an equipment as an adequate ambulance service. Even the showing made by the *Lancet* can be hardly called a highly commendable one; and although the *Nineteenth Century* author may have been wrong in implying that there were no ambulances in England, he was right in assuming that the English hospitals were far behind the American in this particular.

In Paris the problem of immediate surgical aid is at present receiving great attention. The movement was set on foot by the *Progrès Médical*, and Professor Terrier will speak on it before the French Surgical Congress. A correspondent of the *British Medical Journal* states that models of automobile and other carriages are being constantly submitted for trial and approval. The promoters of these devices point out that they do not need to be constantly fed, whether they are at work or not, and that they have various other advantages over the horse service.

#### THE FIRST OVARIOTOMY.

ACCORDING to "Memorials of the Faculty of Physicians and Surgeons of Glasgow," by Alexander Duncan, the first ovariectomy was performed by Mr. Robert Houston, of Glasgow, in 1701, or more than a hundred years before the operation of Ephraim McDowell, of Kentucky, who is generally credited with being the earliest ovariectomist.

The following account of Houston's operation is quoted by the *Quarterly Medical Journal* from Mr. Duncan's book. It was published in the thirty-third volume of the "Philosophical Transactions," London, 1733. Whether the claim that this was the first recorded ovariectomy is true or not, the account is interesting reading.

"August, 1701, I was in the Country, with a Patient, the Lady Anne Houston, Wife to Sir John Houston, Baronet, in the Shire of Renfrew, ten miles from Glasgow, North Britain. This charitable lady pressed me with great Earnestness to visit a Tenant's Wife, who lay bedridden of an uncommon Disease, which no Physician or Surgeon who had seen her could give any Name to, or account for.

She inform'd me the ablest of that Country had forsaken her, and declared her incurable, so that I could lose no Reputation by the Result of my Endeavours.

"In order to oblige this worthy lady, and in Compassion to the Distress of a poor Woman in so deplorable a Condition, deserted and given over on all sides, I went, determined to do everything in my Power for her Relief. She was in the 58th Year of her Age, her name was Margaret Millar. She inform'd me that her Midwife, in her last lying-in at 45 Years old, having violently pulled away the Burthen, she was so very sensibly affected by a Pain, which then seized her in the left Side, between the Umbilicus and Groin, that she scarce ever had been free from it after, but that it had troubled her more or less during thirteen Years together; that for two Years past she had been extremely uneasy, her Belly grew very large, and a Difficulty of breathing increased continually upon her; inasmuch that for the last six Months, she had scarce breathed at all but with the utmost Difficulty. That in all that Space of Time, having quite lost her Appetite, she had scarce eat so much as would nourish a sucking Child, and that for three Months together she had now been forced to lie constantly on her Back, not daring to move at all, to one side or other.

"This Tumour was grown to so monstrous a Bulk that it engrossed the whole left Side, from the Umbilicus to the Pubes, and stretched the Abdominal Muscles to so unequal a Degree that I don't remember ever to have seen the like in the whole Course of my Practice. It drew towards a Point. Her being so long confined to lie continually on her back having grievously excoriated her, added much to her Sufferings, which with want of Rest and Appetite, had wasted her to Skin and Bone, as the poor Woman herself expressed it. Indeed she needed not to have told me so, my Eyes were too faithful Witnesses of her low and wretched Condition.

"Scarce able to speak out, she told me that having heard much of my Success, she had strong Hopes of Relief, provided I would try at least and do something in pity of her Affliction. I answered her that I was willing, but afraid, in her low State, she would not have Strength to undergo a large incision; that in order effectually to relieve her, I must be obliged to lay open a great Part of her Belly, and remove the Cause of all that Swelling; she seemed not frightened, but heard me without Disorder, and as if inspired with sudden Courage, pressed and urged me to the Operation.

"I drew (I must confess) almost all my Confidence from her unexpected Resolution, so that without loss of Time, I prepared what the Place would allow, and with an Imposhume Lancet, laid open about an Inch, but finding nothing issue, I enlarged it to two Inches and even then nothing came forth but a little thin yellowish Serum, so I ventured to lay it open about two Inches more. I was not a little startled, after so large an Aperture, to find only a glutinous Substance bung up the Orifice. All my difficulty was to remove it; I try'd my Probe, I endeavoured with my Fingers, but all was in vain; it was so slippery that it eluded every Touch, and the strongest hold I could take.

"I wanted, in this place, almost everything necessary, but bethought myself of a very odd Instrument, yet as good as the best in its Consequence, because it answer'd the end propos'd. I took a strong Firr-Splinter, such as the Poor in that Country ordinarily used to burn instead of Candles; I wrapt about the End of this Splinter some loose Lint, and thrust it into the Wound, and by turning and winding it, I drew out some two Yards in Length, of a Substance thicker than any Gellie, or rather like Glue that's fresh made and hung out to dry; the Breadth of it was above ten Inches; this was followed by nine full Quarts of such Matter as I have met with in Steatomatous and Athromatous Tumours, with several Hydatides of various Sizes, containing a yellowish Serum, the least of 'em bigger than an Orange, with several large Pieces of Membranes, which seem'd to be parts of the distended Ovary. Then I squeez'd out all I could, and stitch'd up the Wound in three Places, almost equi-distant; I was oblig'd to make use of

Lucatellus's Balsam, which was made by her Lady for the Use of the Poor; with this Balsam I cover'd a Pledget the whole Length of the Wound, and over that laid several Compresses, dipp'd in warm French Brandy, and because that I judg'd that the parts might have lost their Spring by so vast and so long a Distention, I dipt in the same Brandy a large Napkin four times folded, and applied it over all the Dressings, and within a couple of strong Towels which were also dipt, I swathed her round the Body, and then gave her about four Ounces of the following Mixture which I had from her Lady.

" R Aq. Menthae . . . . . lb. fs.  
Aq. Cinnamon fert. . . . . lb. fs.  
Syr. Diacondil . . . . . 3 vi. M.

" The Cinnamon Water was drawn off from Canary and the best Cinnamon; indeed it was the finest and most fragrant Cinnamon Water I ever tasted; of this Mixture I ordered her two or three Spoonfuls four times a day.

" Next morning I found her in a breathing Sweat, and she informed me, with great Tokens of Joy, that she had not slept so much, nor found herself so well refresh'd, at any Time for three Months past. I carefully attended her once every Day, and as constantly dressed her Wound in same Manner as above, for about eight Days Together; I kept in the lower Part of the Wound a small Tent, which discharged some Serosities at every Dressing for four or five days. But Business calling me elsewhere, I left her, having first instructed her two Daughters (both Women, who carefully attended her) how to dress her Wound, and told 'em what Diet I thought most proper, enjoining 'em strictly to observe what I order'd.

" Her chief Food was strong Broth made of an old Cock, in each Porringer of which was one Spoonful of the Lady's Cinnamon Water; this was repeated four times a day, and gave her new Life and Spirits.

" After three Weeks Absence I called at her House, and finding it shut up, was a little surpriz'd, but had not gone far before I was much more surpriz'd, when I found her sitting wrapt up in Blankets, giving Directions to some Labourers who were cutting down her Corn.

" She amended apace to the Admiration of everybody thereabouts, recovered surprisingly, and lived in perfect Health from that time, which was in August, 1701, till October, 1714, when she died in ten Days' sickness."

Some pathological observations follow, and the paper finishes with a Bibliography of Ovarian Tumors.

Housten's case of ovariectomy is notable, not only as being the first recorded, but for being performed in the absence of proper instruments, and under apparently ludicrously unfavorable conditions; yet with a success which could not have been surpassed by a Keith or a Spencer Wells, with all modern appliances and means, aseptic and antiseptic to boot.

It is noteworthy that in this account no mention is made of the method of dealing with the pedicle, or of the time of removing the stitches from the abdominal wound.

## Correspondence.

### GIVE THE FULL NAME OF AUTHORITIES QUOTED.

PHILADELPHIA, October 30, 1896.

MR. EDITOR:— Having been engaged lately in a literary work involving considerable consultation of papers and verifying of references, I have realized, as any one must under the circumstances, the extra labor necessitated by a practice which has been more or less general with authors, of mentioning only the surname of writers and investigators referred to.

Any one who has had experience cannot fail to have been struck with the large number of persons of the same surname who are contributors to medical literature, so that

a reference to Dr. Sydenham's or Dr. Jones's views, or Dr. Ranklin's papers, gives a very imperfect idea of the individuality of the author. Take, for example, the name Hoffmann. The student will find in the Surgeon-General's Catalogue this surname more than one hundred times; and of these Hoffmanns quite a number are authors of voluminous and important papers. So that to be told that Hoffmann believed thus and so, is of little assistance to the reader who desires to look up his views and papers. Again, to take a name to which modern medical literature often refers, Laveran. At least two Laverans, both French army surgeons, have written papers of importance. The Laveran whose name is so identified with the malaria plasmodium is A. Laveran,<sup>1</sup> while Louis Laveran is a very different person. Yet writers only quote Laveran. It is needless to multiply instances. They will occur to any one.

My object in asking publicity to this letter is to beg writers to adopt the practice of giving the full name of the authority quoted. This, of course, involves a little trouble at first to hunt up the Christian name; but, as years roll on and we are all explicit in indicating authorities quoted, it will become easier and easier, while the amount of labor saved to those looking up references will be immeasurable. Especially important is it that the editors of the various handbooks and annuals which are now filling such a useful niche in medical literature should adopt the practice of using the full name, for it is from suggestions in such books that writers often want to look up references.

Respectfully yours,

JAMES TYSON, M.D.

<sup>1</sup> Unfortunately, even the Surgeon-General's Catalogue has not the full Christian name.

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 24, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York . .	1,892,332	679	243	10.35	14.25	3.75	1.35	2.70	
Chicago . . .	1,678,967	385	102	20.16	9.52	5.04	5.82	8.12	
Philadelphia .	1,164,000	374	102	11.61	8.91	2.16	1.35	6.75	
Brooklyn . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . .	560,000	—	—	—	—	—	—	—	
Boston . . .	494,005	207	60	11.04	14.40	.48	3.84	4.80	
Baltimore . .	496,315	185	62	12.96	11.34	3.78	2.16	5.40	
Cincinnati . .	336,000	106	29	14.10	12.22	2.82	4.70	6.58	
Cleveland . .	314,531	81	34	20.91	6.15	2.46	1.23	13.53	
Washington .	275,500	110	25	10.92	17.29	—	2.73	7.28	
Pittsburg . .	238,617	58	29	36.12	6.88	18.92	3.44	13.66	
Milwaukee . .	276,000	—	—	—	—	—	—	—	
Nashville . .	87,764	25	6	32.00	4.00	16.00	8.00	—	
Charleston . .	65,165	—	—	—	—	—	—	—	
Portland . .	40,000	—	—	—	—	—	—	—	
Worcester . .	96,687	25	8	16.00	12.00	—	4.00	8.00	
Fall River . .	88,020	35	13	22.88	5.72	8.58	5.72	2.86	
Lowell . . .	84,359	30	10	10.00	16.66	10.00	—	—	
Cambridge . .	81,519	19	6	15.78	31.56	10.52	—	5.26	
Lynn . . . .	62,355	11	3	9.09	9.09	—	—	9.09	
New Bedford .	55,254	19	9	26.30	—	15.78	—	10.52	
Springfield . .	51,534	15	5	20.00	—	6.66	—	13.33	
Lawrence . .	52,153	15	7	26.66	—	—	—	20.00	
Holyoke . . .	40,149	—	—	—	—	—	—	—	
Salem . . . .	34,437	9	0	22.22	11.11	—	11.11	11.11	
Brookton . .	33,157	—	—	—	—	—	—	—	
Haverhill . .	30,185	9	4	22.22	11.11	—	11.11	11.11	
Malden . . .	29,709	3	1	33.33	—	—	33.33	—	
Chelsea . . .	31,295	—	—	—	—	—	—	—	
Fitchburg . .	26,394	3	0	—	—	—	—	—	
Newton . . .	27,622	11	4	45.45	—	9.09	—	36.36	
Gloucester . .	27,663	—	—	—	—	—	—	—	
Taunton . . .	27,093	8	6	—	—	—	—	—	
Waltham . . .	20,877	3	1	—	—	—	—	—	
Quincy . . .	20,712	—	—	—	—	—	—	—	
Pittsfield . .	20,447	8	1	12.50	37.50	—	12.50	—	
Everett . . .	18,578	2	1	—	—	—	—	—	
Northampton .	16,738	—	—	—	—	—	—	—	
Newburyport .	14,564	6	0	16.66	—	—	16.66	—	
Amesbury . .	10,920	—	—	—	—	—	—	—	

Deaths reported 2,481: under five years of age 787; principal infectious diseases (small-pox, measles, diphtheria and

croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 366, acute lung diseases 294, consumption 285, diphtheria and croup 145, diarrheal diseases 98, typhoid fever 68, whooping-cough 22, scarlet fever 12, cerebro-spinal meningitis 5, measles 3, erysipelas 3.


From whooping-cough New York 9, Chicago 4, Philadelphia and Cleveland 3 each, Baltimore 2, Lawrence 1. From scarlet fever New York 5, Boston 2, Chicago, Philadelphia, Baltimore, Nashville and Fall River 1 each. From cerebro-spinal meningitis New York, Philadelphia, Washington and Worcester 1 each. From measles New York 2, Boston 1. From erysipelas Chicago, Boston and Nashville 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending October 17th, the death-rate was 16.3. Deaths reported, 3,381: acute diseases of the respiratory organs (London) 238, diphtheria 92, diarrheal 67, fever 55, scarlet fever 48, measles 48, whooping-cough 43.

The death-rates ranged from 9.4 in Leicester to 28.8 in Bolton: Birmingham 14.5, Bradford 13.4, Croydon 9.7, Gateshead 15.9, Hull 19.8, Leeds 16.3, Liverpool 20.1, London 15.7, Manchester 19.2, Newcastle-on-Tyne 19.9, Nottingham 14.5, Portsmouth 13.7, Sheffield 21.8.

### METEOROLOGICAL RECORD

For the week ending October 24th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro-	Thermom-		Relative		Direction		Velocity		We'th'r.		Rainfall in inches		
	meter	Daily mean.	Daily maximum.	Daily minimum.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
	Daily mean.	Daily mean.	Maximum.	Minimum.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S...18	29.85	48	50	45	83	97	90	N.	N.W.	9	10	O.	E.	.10
M...19	30.03	44	51	38	72	52	62	W.	W.	14	9	C.	C.	.01
T...20	30.17	46	57	35	48	69	58	S.E.	S.	9	8	C.	C.	.01
W...21	29.92	54	63	45	74	83	78	S.E.	S.W.	20	10	C.	C.	.03
T...22	30.04	46	53	38	65	57	61	W.	N.W.	16	8	C.	C.	.01
F...23	29.92	47	57	37	52	91	72	S.E.	S.	10	10	F.	E.	.04
S...24	29.60	50	60	40	100	91	96	W.	N.W.	6	8	R.	C.	.35
														1.13

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 24, 1896, TO OCTOBER 30, 1896.

The following named recently-appointed assistant surgeons will report to this city and report in person November 4, 1896, to the president of the Army Medical School, for the course of instruction prescribed in General Orders No. 78, September 22, 1893, from A. G. O.:

FIRST-LIEUTS. BASIL HICKS DUTCHER, LEIGH AUSTIN FULLER, FRANKLIN MIDDLETON KEMP, GEORGE ALFRED SKINNER, CARL ROGER DARNALL, WILLIAM EVANS RICHARDS.

### RECENT DEATHS.

WILLIAM WILLIAMSON WELLINGTON, M.D., M.M.S.S., died at Cambridge, October 27th, aged eighty-two years.

OSCAR DUSTIN CENEY, M.D., M.M.S.S., died in Haverhill, October 28th, aged fifty years.

JOHN LANGDON HAYDEN LANGDON DOWN, M.D., F.R.C.P., London, consulting physician to the London Hospital, died October 7th, aged sixty-seven years.

WILLIAM MORRANT BAKER, F.R.C.S., Eng., consulting surgeon to St. Bartholomew's Hospital, died October 3d, aged fifty-seven years.

H. C. CHAPIN, M.D., of Lincoln, Mass., died October 31st. Dr. Chapin was eighty-one years old, had practised medicine in Lincoln for fifty-six years and was one of the oldest and best known physicians in that vicinity, having been in active practice to within a few hours of his death. He leaves two sons and two daughters.

DR. GEORGE HARLEY, of London, whose death is announced to have taken place on Tuesday, the 27th inst., was a vigorous writer on medical topics, and his work on diseases of the liver had attracted wide attention. He was sixty-seven years old.

### SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a stated meeting at 19 Boylston Place, on Saturday, November 14, 1896, at 8 P. M.

Subjects for the evening: "The Modern Treatment of Malignant Diseases," by Dr. J. Collins Warren. Discussion by Drs. Geo. W. Gay, M. H. Richardson, F. W. Johnson and Paul Thordike.

"Serum Therapy," by Dr. C. F. Withington. Discussion by Drs. J. H. McCollom, V. Y. Bowditch, H. Jackson and J. H. Wright.

Dr. C. W. Townsend will show a bed bathtub for use in typhoid fever.

Supper after the meeting.

JOHN DANF, M.D., Acting Secretary.

### HARVARD MEDICAL SCHOOL.

#### EVENING LECTURES.

The next lecture will be given on November 5th at 8 P. M., by DR. GEO. W. GAY. Subject: "When to Call a Surgeon in Appendicitis."

The lecture on November 12th will be given by DR. CHARLES HARRINGTON. Subject: "New and Old Methods of Preserving Foods and their Influence on the Public Health." The profession are invited.

### BOOKS AND PAMPHLETS RECEIVED.

Feeding in Early Infancy. By Arthur V. Meigs, M.D. Philadelphia: W. B. Saunders. 1896.

Experiments in General Chemistry and Notes on Qualitative Analysis. By Charles R. Sanger, A.M., Ph.D., Elliot Professor of Chemistry in Washington University. St. Louis, Mo.: Published by the Author. 1896.

The American Academy of Railway Surgeons. Report of the Second Annual Meeting held at Chicago, Ill., September 25-27, 1895. Edited by R. Harvey Reed, M.D., Columbus, O. Chicago: American Medical Association Press. 1896.

Water and Water Supplies. By John C. Thresh, D.Sc. (London); M.B. (Victoria); D.P.H. (Cambridge); Medical Officer of Health to the Essex County Council; Lecturer on "Public Health," King's College, London; Editor of the *Journal of State Medicine*, etc. London: The Reuben Publishing Co. Limited. Philadelphia: W. B. Saunders. 1896.

A Practical Treatise on Materia Medica and Therapeutics. By Roberts Bartholow, M.A., M.D., LL.D., Professor Emeritus of Materia Medica, General Therapeutics and Hygiene, in the Jefferson Medical College of Philadelphia; Fellow of the College of Physicians; Member of the American Philosophical Society; Honorary Fellow of the Royal Medical Society of Edinburgh, etc. Ninth edition, revised and enlarged. New York: D. Appleton & Co. 1896.

An American Text-Book of Physiology. By Henry P. Bowditch, M.D., John G. Curtis, M.D., Henry H. Donaldson, M.D., W. H. Howell, Ph.D., M.D., Frederic C. Lee, Ph.D., Warren P. Lombard, M.D., Graham Lusk, Ph.D., W. T. Porter, M.D., Edward T. Reichert, M.D., and Henry Sewell, Ph.D., M.D. Edited by William H. Howell, Ph.D., M.D., Professor of Physiology in the Johns Hopkins University, Baltimore, Md. Fully illustrated. Philadelphia: W. B. Saunders. 1896.

Recherches Cliniques et Therapeutiques sur L'Epilepsie, L'Hysterie et L'Idiotie, Compte-Rendu du Service des Enfants Idiots, Epileptiques et Arriérés de Bicêtre pendant l'Année 1895. Par Bourneville, Médecin de Bicêtre, avec la Collaboration de MM. Boncourt, Comte, Dardel, Dubarry, Le Riche, Lombard, Noir (J.), Pilliet, Ruel, Sollier, Tissier, Internes et Anciens Internes du Service. Volume XVI. Avec 31 figures dans le texte et 8 planches. Paris: Bureaux du Progrès Médical. 1896.

Functional Disorders of the Nervous System in Women. By T. J. McGillicuddy, A.M., M.D., Consulting Physician to the Italian Hospital, New York; Surgeon in charge of the New York Mothers' Home Maternity Hospital; Surgeon in charge of the Metropolitan Dispensary and Hospital for Women and Children; Fellow of the New York Academy of Medicine; Member of the American Medical Association, etc. Illustrated with 45 wood-engravings and two chromo-lithographic plates. New York: William Wood & Co. 1896.

A Handbook of Pathological Anatomy and Histology with an Introductory Section on Post-Mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia College, New York, and T. Mitchell Prudden, M.D., Professor of Pathology and Director of the Laboratories of Histology, Pathology and Bacteriology, College of Physicians and Surgeons, Columbia College, New York. Fifth edition. Illustrated by 365 wood-engravings printed in black and colors. New York: William Wood & Co. 1896.



## Original Articles.

THE RESULTS OF OPERATIONS FOR THE CURE OF CANCER OF THE BREAST.<sup>1</sup>

BY J. COLLINS WARREN, M.D., LL.D.,  
Professor of Surgery in Harvard University.

THE belief in former times that cancer of the breast was an incurable disease was doubtless well grounded, owing to the inadequacy of the operations then performed. Cures were so rare as to be curiosities. This feeling was expressed by no less an authority than Sir James Paget, who says: "I am not aware of a single clear instance of recovery — of such recovery, that is, as that the patient should live for more than ten years free from the disease."

The development of the modern operation has convinced most surgeons that this opinion no longer holds good; but I think it is safe to say that there are quite a number that are still unconvinced, and the belief is still quite prevalent among the profession at large that there are few more discouraging cases for operation than these. This belief is still encouraged — I might say authorized — by the very unsatisfactory operations which are frequently performed by practitioners without due surgical training.

It is now about fifteen years since attention was called to the necessity of a dissection of the axilla by Volkmann, and to the importance of removing the fascia of the pectoralis major muscle by Haidenhain. Mitchell Banks in England and S. W. Gross in this country were also pioneers in the new methods of operation. The recent work of Halsted shows the advantage to be derived from a removal of one or both pectoral muscles, and of exploration of the infra- and supra-clavicular regions.

The prominence which has been given to the axilla as a strategic point in fighting the disease has drawn attention away from the importance of removing more superficial structure. The integuments of the mamma are, however, richly endowed with lymphatics, and are exposed to early infection from the primary focus. The flaps of skin which are left are, therefore, in many cases within the infected area, and are a frequent source of "recurrence." A sufficiently wide sweep of the knife around this organ will usually remove this area, but an open wound is left. The surgeon, therefore, yields to the temptation to save enough integument to obtain union by first intention. As a result, we have more frequent recurrence in the pectoral than in the axillary region; indeed, it is to me surprising to find how effectual a clean dissection of the axilla is against the return of the disease in that particular locality.

It is obvious that a knowledge of the anatomy and development of the mammary gland will assist the surgeon in a proper comprehension of the points of origin and spread of cancer.

The mammary gland is an appendage of the skin, a sort of highly specialized sudoriparous gland. It begins as a growth of the rete Malpighii into the cutis vera in the early weeks of fetal life, and at the period of birth it has already formed a number of radiating tubes with club-shaped ends. In the embryo of the pig at about one month, a faint continuous line, the "milk line" may be found running from axilla to groin on

either side of the abdominal parietes. By a process of differentiation a thickening occurs at certain points, and thus a row of nipples are developed, and such changes when initiated in the human subject may develop supernumerary nipples, and fragments of supernumerary gland tissue may also be formed at the same time. These para-mammary glands are occasionally the starting-point of a cancerous growth.

The area covered by the mammary gland extends from about the third to the seventh rib in a vertical direction, and from the margin of the pectoralis major to a little beyond the line of the sternum laterally. The gland is not a hemisphere, as usually supposed. Its border is not circular, but three-cornered, one angle or prolongation extending towards the axilla, another in the direction of the serratus magnus, and a third projects towards the median line in the neighborhood of the sternum. The nipple is not at the centre, but rather nearer the upper and inner quadrant. From the skin over the breast there are sent down certain fibrous prolongations to the gland stroma. These have been described by Sir Astley Cooper as the suspensory ligaments of the gland. It is the retraction of these ligaments which gives rise to the peculiar dimpling of the skin over the growth so characteristic of cancer.

There are two layers of lymphatics running from the gland to the large trunks. The most important of these is the superficial layer. The vessels of this layer form a rich anastomosis immediately under the nipple and finally combine to form two or three large trunks. One of them may be seen traversing the upper and outer quadrant; another takes its origin from the lower and outer quadrant; while a third sweeps around the lower border of the gland from its inner hemisphere. These vessels are exceedingly superficial, and receive branches directly from the skin and subcutaneous tissues, and the region occupied by this plexus is readily infected from the original focus.

The deeper layer follows the fascia of the pectoralis major muscle, and the plexus in this fascia receives branches from the muscle itself. This fascia and its prolongations constitute suspicious soil, and must be removed in every case of operation for malignant disease. A certain number of lymphatic vessels penetrate the submammary tissues and finally pierce the intercostal spaces, uniting with the chain of lymphatics which run along the course of the internal mammary artery, and anastomose with a plexus distributed over the surface of the diaphragm. Tiffany has, in several cases, resected a portion of the rib, and has removed infected sternal glands. This I have also done in one case.

The first group of axillary glands met with lies beneath the outer border of the pectoralis muscle, and receives the large vessels described above. The subscapular group of glands receive lymphatics from the arm principally. The vessels passing through these two clusters unite at the point of the axillary group of glands, and these glands in their turn communicate with the subclavian glands. The principal nerves met with are the long thoracic, the external respiratory nerve of Bell, and one or two subscapular nerves. Several of these nerves may be divided without causing permanent impairment of the muscular action of the shoulder-joint. The intercosto-humeral nerves, distributed as they are to the thorax on one side of the axilla and to the inner surface of the arm on the other,

<sup>1</sup> Read before the Boston Society for Medical Improvement, May 4, 1896.

play an important part in those painful neuralgias which are found both before and after operation.

The operation which I perform at the present time has gradually been developed from the so-called "completed operation," by which was meant not only the removal of the mammary gland with a more or less abundant amount of integument, but also a free dissection of the axilla. It comprises a removal of the gland and para-mammary tissue and the integuments in sufficient amount to include the superficial lymphatic vessels which, as has been shown, spring from the various quadrants and run towards the margin of the pectoralis major muscle; a removal in all cases of the sternal portion of the pectoralis major muscle, division of the pectoralis minor muscle, and occasionally removal of the muscle, dissection of the axilla and the infra-clavicular space; exploration in many cases of the supra-clavicular region.

The details of the operation are as follows: An incision is made from the outer margin of the axilla along its anterior border, and along the line of the pectoralis major muscle, following the outer and lower margin of the breast, to a point on the boundary line of the inner and lower quadrant. A second incision is made along the upper margin of the breast, beginning at about the middle portion of the axillary incision, and gradually diverges from the lower incision so as to sweep through the middle of the upper inner quadrant and the inner portion of the inner lower quadrant. Such incisions form a pear-shaped figure which includes all of the outer hemisphere and the greater portion of the inner hemisphere. A third incision is made at right angles to the upper incision at the point where the axillary vessels lie, and reaches as far as or beyond the clavicle. After reflecting back the integument so as to expose the mammary gland and para-mammary fat and the axillary region, the knife is carried down to the pectoralis major, the sternal insertion of which is now divided. This enables the operator to throw the mass to be removed outward, the muscle being divided near its insertion into the humerus. The pectoralis minor is next divided, and the dissection of the axilla follows, from above on both sides downward, the large vessels being carefully cleansed of all loose tissue. As the dissection proceeds the breast and adnexa are gradually separated from the chest wall and removed in one continuous mass.

In dissecting the axilla especial attention should be paid to a prolongation of adipose tissue which accompanies the blood-vessels to the point where they dip beneath the clavicle, and also a similar tongue of tissue which runs behind them. A thin, blade-like mass of fatty tissue lying between the serratus magnus and the subscapularis should also receive the attention of the operator, for here numerous small, shot-like glands are found in specially malignant forms of the disease.

If the dissection of the axilla shows a general infection of the glands, then the third incision through the integuments should be continued above the clavicle along the posterior margin of the sterno-mastoid muscles and the supra-clavicular glands found lying in the posterior cervical triangle should be removed. If numerous they should be traced down behind the clavicle so that the forefingers introduced above and below that bone can easily meet behind it. Such a dissection is rarely necessary as the glands found above the clavicle are comparatively rarely infected at the point which the disease is attacked. Division

of the clavicle does not add materially to the exposure of the region and prolongs the operation, and should therefore be reserved for exceptional cases.

The amount of integument that has been removed will prevent the complete closure of the lower and inner portion of the wound. The custom of leaving this to granulate seems to me a measure which prolongs convalescence and often shocks the sensibilities of the patient, already sufficiently disturbed. Tiersch grafting is not an esthetic manner of closing the defect, and is not always to be relied upon to cover in every spot of exposed wound surface.

In my later operations I have consequently resorted to a plastic operation which consists in turning into the exposed space two symmetrical horizontal flaps from below and bringing the edges of the area thus denuded together in a vertical line, so that we have when the operation is finished a vertical incision extending down from the middle of the closed area towards the iliac crest in the shape of a cross. This enables the surgeon to remove all the infected tissue, and at the same time to obtain union by first intention.

A careful attention to hemostasis protects from shock and enables the surgeon to make this extensive dissection deliberately. An operation which has been completed within the hour is probably inadequate; on the other hand, a prolongation of the operation beyond the limit of two hours is fraught with danger, as the chances of shock and sepsis are thereby sensibly increased.

The operation should be performed by one man from beginning to end: by this I mean that the custom of leaving many details to an assistant does not give the patient the benefit of that continuous attention which the operation demands, and is her right. The material of which sutures and ligatures are composed is unimportant provided they are aseptic. It is unnecessary to apply deep or buried sutures. A small strand of sterilized gauze should be inserted near the axillary margin of the wound to drain off the lymph serum which flows so abundantly from the wounded lymphatics during the first twenty-four hours. This should be removed on the second day and the provisional suture, left there for the purpose, tied.

A voluminous aseptic dressing should be applied, and the outer layers should include the arm and shoulder. The dressing is opened on the second day in order to withdraw the gauze drain. It adds greatly to the patient's comfort to change the inner layers, placing cool, fresh gauze next the skin. No further change is necessary until the stitches are removed. This may begin on the fifth day. It is well to replace the sutures with strips of crêpe lisse held in place by collodion.

The accompanying tables are compiled from cases operated upon in hospital and private practice and contain those only which have undergone a more or less radical operation and in which the diagnosis of cancer has been made by competent authority. In all cases, except two, microscopical examinations were made; and in these two cases (operated upon at some distance in the country), the diagnosis of cancer was considered by me so unquestionable that the specimen was not preserved.

In 92 consecutive cases in which the operation has been performed, there were but two deaths (both hospital cases), one from erysipelas and one from Bright's disease. The death from erysipelas, occurring many

years ago, was due to contagion from hospital bedding, the patient having been placed for three days prior to the operation in a bed formerly occupied by a patient with erysipelas. The other fatal case was one in which an operation had been performed for palliative purposes chiefly to relieve the patient from the suffering caused by the presence of a large ulcerated carcinoma.

This gives a mortality of but a little over two per cent. That the completed operation is essential is shown from the fact that in three cases only were the lymphatic glands of the axilla found to be non-infected.

The tables include only those cases in which it was possible to obtain a subsequent history. One or two cases have been rejected as throwing no light upon the value of the modern operation. Two were taken from the list (one a male), as several incomplete operations had been already performed upon them before entering the hospital. Another case was rejected, as death occurred from erysipelas several months after leaving the hospital. Still another case is not given, in which it was considered advisable to perform a palliative operation and several infected glands were allowed to remain untouched.

With these exceptions and those not heard from, the series of cases is as nearly as possible a consecutive one.

Taking three years as the period which it is generally considered as necessary to elapse in order to pronounce the case cured, we have 42 cases, with 11 alive and well, or 26 per cent. This includes the two fatal cases. Leaving these out of the calculation, we have 40 cases with 11 cures, or a percentage of 27.

There are 15 alive and well without recurrence at the end of two years, which gives a percentage of 30; or, again, omitting the two deaths from operation, 31 per cent. In this series of successful cases two are omitted in which a recurrence took place, but the patients are alive and well at the present time. In one the original operation was performed on January 1, 1893, and a recurrent nodule was removed in December, 1894; since then the patient has been well. In the second case the operation was performed in 1885 (No. 4); a nodule was removed in 1894. The patient reports herself well in February, 1896. Such a case strongly suggests the possibility of a new infection starting from a para-mammary gland.

In a series of 28 consecutive cases in my private practice there are 14 alive and well at the present time. Billroth asserts that a patient who has lived a year after the operation, and, after an examination by a competent surgeon, is pronounced free from recurrence, can be regarded as cured. In very many of the cases in which recurrence is said to have occurred at a later date, the nodule has doubtless been overlooked. In 33 cases in which the date of the recurrence was noted, it was found that the disease reappeared on an average in fourteen months after the operation. In the great majority of cases in which recurrence occurs, the nodule can be discovered by a careful examination as early as one year after the operation.

Volkmann's law may be thus stated: If there has been no return of the disease one year after the operation, a cure can be hoped for; if the patient continues well at the end of two years, a cure is probable; and if well at the end of three years, the cure

may be regarded as certain. The average duration of life in 28 cases in which death occurred from a return of the disease was thirty-two months.

In regard to the locality of the recurrence, the figures are very suggestive. In 27 cases in which this point was noted, the disease reappeared in the pectoral region in 15; at the margin of the axilla, in 2; in both pectoral regions and axilla, in 4; in the sternum, in 2; and in the opposite breast, in 1. Death without local recurrence is noted in 3 cases. The average age at which the disease appeared in 63 cases was forty-nine years. The oldest was seventy-two, the youngest twenty-two. There were 25 between fifty and sixty, 9 between sixty and seventy, 21 between forty and fifty, 6 between thirty and forty, and 27 between forty-five and fifty-five years of age. There were 16 single and 47 married.

There were two cases in which the disease developed from a benign tumor. In No. 39 the cancerous growth was found to have started in a chronic mammary tumor, or fibroma, which the patient had had for over twenty years.

In a second case the disease had clearly originated in the centre of a mass of connective-tissue growth produced by a chronic mastitis. In this case one small gland was found in the axilla, but the microscope showed that it was not infected.

There were two cases of "cancer of the axillary border." This is a term which I have applied to a certain form of cancer of this region which begins as a lenticular nodule in the skin at the point mentioned. It remains for a long time quite localized, but eventually involves the breast and axilla. On one occasion I have had the opportunity of operating upon the disease before it had attacked the breast. An exploration of the axilla in this case showed that no infected glands existed. The case is not reported in the following series, as the breast was not affected. The patient has had no recurrence and at the time of writing two years have elapsed since the operation. Nos. 40 and 45 are both examples of this disease, and, as will be seen by reference to them, in one case death occurred from recurrence in the spine. The disease in its early stages presents the appearance of epidermoid cancer, and the appearance of the primary nodule in Case 45 was not unlike that of rodent ulcer. No ulceration existed, but the nodule had a cicatricial and depressed centre with a raised and pearly margin. This type of case, so far as I know, has not before been described. It seems to deserve to be placed in a special group, as, although at first extremely benign and capable of cure, it is liable to rival the malignant forms of cancer of the breast.

**CASE I.** This patient, forty-five years old and single, was operated upon July 30, 1883. There was nothing in her family history suggestive of malignant disease, and no assignable cause for her own malady, which had existed for three years and seven months. At the time of operation the nipple was retracted, and no glands were found in the axilla. The breast was removed and the growth found to be a colloid cancer. In July, 1888, the axilla was dissected, and a nodule the size of a hen's egg removed. When last heard from, in May, 1895, she was well.

**CASE II.** Operation in June, 1884. The patient was sixty years of age, single, with a negative family history, and no cause known for the disease which

had begun about three years ago. At the time of operation a soft nodule about the size of an English walnut, was found in the inner hemisphere of the breast, and no glands were apparent in the axilla. The breast was removed and the axilla explored. The diagnosis was cancer. This patient died of apoplexy January 8, 1894, having had no recurrence.

CASE III. A single woman, age forty, with the following family history: Her maternal grandmother died of cancer of both breasts; a maternal aunt died of cancer of the breast; a maternal cousin, of cancer of the rectum; and a paternal aunt had cancer of the breast. There was no cause assigned for this growth, which appeared about a year before. At the time of operation there was a nodule in the outer hemisphere adherent to the skin. No glands were felt in the axilla. She was operated upon in December, 1884; the breast was removed and a small infected gland dissected from the axilla. The tumor proved to be a scirrhus growth. On April 2, 1895, she writes, "Am in perfect state of repair."

CASE IV. Operated on March 24, 1885. Patient sixty years of age, married, with a negative family history. There was no cause assignable for her trouble, which began about two months before the operation. Examination showed a lump in the upper, inner quadrant of the breast, the size of an egg. The breast was removed and the axilla dissected. The report of the pathologist's examination of the original tumor unfortunately was lost; but in February, 1894, a recurrent nodule, the size of a pigeon's egg, was removed from below and outside the centre of the scar; and this, which was of two months' duration, was found to be cancer. She was heard from in February, 1896, and was free from recurrence. A case of new infection in a para-mammary gland?

CASE V. In this case the disease had existed for two months, in a married woman of sixty-five, with a negative family history, and without any known cause. At the time of operation, July, 1885, there was found extensive disease of the breast and axilla. The breast was removed and the axilla dissected, the pathological diagnosis being cancer. She died July 25, 1891, of sporadic cholera, age seventy-one, and had had no recurrence.

CASE VI. This patient was fifty-two years old and married. Her family history was negative, and there was no cause known for the disease, which had existed for six months. The skin was involved, there being rose-like outgrowths, and the glands in the axilla were enlarged to the size of a lemon. On November 6, 1886, the breast was removed and the axilla cleaned out. The tumor proved to be a medullary cancer. In March, 1889, she was reported to have a recurrence, the size of a small lemon, involving the skin and firmly adherent to the chest wall. No further report of this case has been received.

CASE VII. Operated on January 29, 1887. The patient was a married woman, thirty-three years of age, and with a negative family history. There was nothing in the past history to suggest a cause for the disease, other than the occurrence of abscess of the breast during her first and second confinements. The disease first appeared seven months before the operation, and the entire right breast was found firm and tense, the skin red and angry, and the axillary glands affected. She was also three and a half months pregnant. The breast was removed and the axilla dis-

sected. The pathological diagnosis was cancer. April 24, 1887, she had a nodule, the size of an olive, at the border of the axilla. No further report has been received.

CASE VIII. This patient was forty years of age, single, and with a negative family history. Her tumor was of six months' duration, and appeared without any assignable cause. At the time of operation, February 16, 1887, only a small nodule was apparent; but the skin was ulcerated, the nipple retracted, covered with dry scabs, and the axillary glands were enlarged. The breast was removed and the axilla dissected. The growth was cancer, and she had a recurrence in May, 1888, which was removed in July of the same year. She died October 24, 1889, with local recurrence.

CASE IX. A widow, thirty-eight years old, with a negative family and personal history was operated upon March 1, 1887. The disease was of six months' duration, and at the time of operation presented a lump, the size of a walnut, in the left breast. The skin was not involved, and the tumor was movable on the muscle. One gland could be felt in the axilla. The breast, with the axillary contents, was removed, and the disease found to be cancer. She was well when last heard from — March, 1896.

CASE X. This patient was forty years of age, married. Her family history presented nothing of interest, nor could any probable cause for her present trouble be ascertained. The disease had existed for four months, and at the time of operation had extended to the clavicular glands. The original growth was in the outer hemisphere of the breast. On October 26, 1887, the breast and axillary contents were removed, and the disease found to be medullary cancer. She died of general cancerous infection in August, 1888.

CASE XI. This patient was forty-three years of age, married, and without any significant family or past history. The disease had been noticed for a year, and at the time of operation, December 11, 1887, was the size of a small lemon in the centre of the breast. The axillary glands were enlarged. The breast was removed and a very careful dissection of the axilla made. This tumor was a medullary cancer. In August, 1889, she had recurrence of the disease in the sternum with internal metastases, and died in September, 1890.

CASE XII. This was a married woman of forty-five. Her grandfather had cancer of the lip, and a sister died of rectal cancer. Seventeen years before coming under my care she had a broken breast, and since that time that breast had been larger than the other. The present trouble had been noticed for about a year, and at the time of operation formed a tumor the size of a lemon in the upper inner quadrant of the breast. The skin was adherent, and there were enlarged glands in the axilla, but none in the clavicular region. On January 9, 1888, the breast and a chain of enlarged glands extending along the vessels and under the pectoral muscles were removed. The pathologist found the tumor to be medullary cancer. The disease returned locally in June, 1889, and she died January 2, 1890.

CASE XIII. Operated upon February 6, 1888. This patient was fifty years old, married, family history negative. She had had fifteen children, with an abscess in the breast now affected, after the first child. Since that time she has been unable to nurse

from that breast for longer than three weeks at a time. The present trouble is of three years' duration, and at the time of operation the breast was the size of a cocoa-nut, the skin was adherent and the nipple was much retracted, but the growth was movable on the muscle below. Small glands could be felt in the axilla. The breast was removed, and the axilla was merely explored, no glands being removed. The tumor was a scirrhus cancer. The disease recurred in the scar in seven weeks, and the patient died in five months.

**CASE XIV.** In this case the disease had existed for six months in a single woman of fifty years. There was nothing in the family history suggesting malignant disease, nor was any cause known to the patient for her malady. She was operated upon October 11, 1888, at which time the breast contained a cyst with beginning cancer in the walls. The breast was removed, and the diagnosis confirmed by microscopical examination. No dissection of the axilla was made. She was last heard from in March, 1893, up to which time there had been no recurrence of the disease.

**CASE XV.** This patient was fifty years of age, single, and with an unimportant family history. Her disease had begun eight months before operation with no discoverable cause, and appeared as a scirrhus nodule in the anterior axillary fold. There was one small gland in the axilla. On October 22, 1888, the breast was removed, and the axilla dissected. Microscopic examination showed the growth to be scirrhus cancer. She died August 14, 1893, probably of gastric cancer, but there had been no local recurrence of the disease.

**CASE XVI.** This patient was fifty years old, single, and her family history was not of interest. No cause was assigned for the disease, which began several months before. The patient was insane. At the time of operation the tumor was the size of a lemon, the skin not adherent, and the axillary glands enlarged. On January 5, 1889, the breast was removed, with the glands. The pectoralis muscle was separated at the clavicular portion, and glands removed through this space. The axilla was dissected below. The tumor was a medullary cancer. She died December 15, 1892, after fracture of the neck of the femur. At the autopsy a tumor, two and one-half inches in diameter, was removed from the sternum. There was a cheesy tumor about the right hip, which it was thought might be of a cancerous nature.

**CASE XVII.** This case was operated upon January 9, 1889. The patient was fifty-seven years of age, married; her grandmother died of cancer of the breast. She had mastitis thirty-one years ago; seven years ago, Paget's disease; and the nipple was removed six years ago. The present disease was first noticed eight months ago, and at the time of operation, appeared as a nodule the size of a walnut, surrounded by infiltration, but not adherent to the skin. The axillary glands were enlarged. The breast was amputated, and two small glands, which were all that could be found, were removed from the axilla. The tumor was medullary cancer. September 4, 1889, a recurrence, the size of a filbert, was removed from above the scar. February 21, 1890, another recurrence was removed from beneath the scar. There has been no further report.

(To be continued.)

## OBSERVATIONS UPON CANCER OF THE BREAST.

BY A. T. CABOT, A.M., M.D.,  
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It is possible that some micro-organism may presently be discovered upon which cancer depends, and even that we may learn to treat the condition by some antitoxic injection; but, until that day arrives, the lines upon which we must fight the disease are those drawn upon our understanding of its primarily local beginning.

In the effort to limit its growth, the anatomical pursuit of the lymphatics in their course from the seat of disease is of the greatest importance, enabling us to follow the cancer beyond its macroscopic seat to the parts where it is still existing in a microscopic degree.

For many years the writer has made it a practice in removing a carcinomatous breast, to begin at the inner border and dissect the whole mammary gland off of the pectoral muscle taking the fascia with it. The breast is thus rolled outwards towards the axilla and the dissection is followed close to the wall of the chest, removing all the loose cellular tissue back to the edge of the latissimus dorsi muscle, and then upwards into the axilla from which all loose tissues are removed. Whenever the pectoral muscle is in any degree involved it is extensively removed. The skin around the nipple is always widely removed with the breast and if it is at all adherent to the growth a wide margin of healthy skin, about that which is adherent, is also removed.

He has not carried out what is known as the completed operation, which includes the removal of the pectoral muscle and dissection of the supra-clavicular space, in as large a proportion of cases as is advised by some of the advocates of this method.

About a year ago he looked up the notes of his operations and found 82 cases in which the diagnosis was confirmed by microscopical examination. Four of these 82 patients died from the immediate effects of the operation. These were all hospital patients operated upon many years ago when the nature of aseptic preparation was not as thorough as at present. He sent letters of inquiry to the 78 patients who survived the operation, and received answers in regard to 49 of them. Of these 49 patients, 27 had died from recurrence of the disease.

The fatal recurrence occurred within one year in 16 cases.	
Between 1 and 2 years in . . . . .	4 cases.
Between 2 and 3 years in . . . . .	3 cases.
Between 3 and 4 years in . . . . .	2 cases.
Between 4 and 5 years in . . . . .	2 cases.
In the eighth year . . . . .	1 case.

In four cases death had occurred from other causes. Of these patients.

1 had lived, since operation . . . . .	1 year.
1 had lived, since operation . . . . .	2½ years.
1 had lived, since operation . . . . .	5 years.
1 had lived, since operation . . . . .	8 years.

In six cases secondary nodules had been removed since the first operation, and the patients had remained free from further recurrence.

(1) In this case a secondary nodule was removed three months after the first operation, and the patient has lived five years without recurrence.

(2) In this case a slight thickening in the axilla, of doubtful character, was removed six months after the

primary operation, and the patient has lived four years without further recurrence.

(3) In this case the supra-clavicular glands enlarged four years after the primary operation. They were carefully dissected out, and the patient is still well, eight months later.

(4) In this case a recurrent nodule was removed two years after the first operation, and the patient is living and well eight years after this last operation.

(5) In this case a dissection of the axilla was made for a recurrence there, following a simple amputation of the breast done by another operator some months before. At the end of three years there has been no recurrence.

(6) In this case the right breast was removed, with axillary contents, five years ago. The report is received that within three months the left breast has been removed on account of cancer which had appeared in it.

In eleven cases there has been no recurrence. Of these patients.

3 survived . . . . .	2½ years.
1 survived . . . . .	3½ years.
1 survived . . . . .	4½ years.
1 survived . . . . .	7 years.
2 survived . . . . .	8 years.
1 survived . . . . .	9 years.
1 survived . . . . .	10 years.

From these tables we see that there are eleven patients who are living without recurrence, more than three years after the last operation, and that two patients who died of other ailments had lived more than three years without any recurrence of the cancer.

If we count these cases which passed the three-year limit as cures, and calculate their percentage among the 49 cases heard from, we have 26 per cent. of cures among our cases. This is not, however, a fair estimate, for it is probable that among the cases not heard from the percentage of recurrence was greater than among those whose after-history we learned.

If we take the whole number of 78 cases as the basis of our calculation and consider all of the cases not heard from as failures, we still have 17 per cent. of success. The true rate is somewhere between these figures.

An immunity from recurrence for three years is held by many operators to warrant a case being considered as a cure. A glance at the first table published above shows that three years' immunity is too short to establish a claim for cure, for in it are mentioned five patients who had more than three years' health, and, still, finally died of the disease.

The proportion of success in the above series of cases compares favorably with that reported by other operators.

The thoroughness of the operation practised has been continually improved; and it is probable that the more recent cases, many of which, done within the past eighteen months, are not included in these statistics, will show an even greater measure of success.

The cases operated upon were in no way selected cases and in many of them the disease was so far advanced that the operation was resorted to as a forlorn hope with the object of relieving pain rather than with any expectation of eradicating the disease. In most cases the axillary glands were found carci-

nomatous, even when no enlargement had been made out before the operation. It is an encouraging fact that in some seemingly hopeless cases a long period of immunity has followed the thorough removal of the growth.

Among these cases were several in which the carcinoma appeared as a secondary change in a breast which had suffered from a chronic circumscribed mastitis.

In one recent case the commencement of this change was observed. The patient, with a wide nursing experience, and with a sister who had had a cancer of the breast, kept a sharp watch upon one of her breasts which had for many years been somewhat thickened. She came for examination because she had noticed a very slight adhesion of the skin to the breast at one point. This was so slight as to be only perceived when the skin was pinched up so as to lift it from the breast, when a very slight dimpling at one point could be made out. There was no retraction of the nipple, although the suspicious point lay just below it. An exploratory operation showed a little cancerous point smaller than a pea, and buried in the fibrous tissue left by an old chronic mastitis. In this case the axillary glands showed no cancerous change.

This is the most striking of five patients operated upon by the writer within the past year, in all of whom the existence of cancer was regarded as very doubtful before operation, but in whom cancer was found.

These cases emphasize the importance of operating upon all doubtful cases with the object of discovering such commencing carcinomata early, and thus giving the patient the advantage of a thorough removal while there is a good chance that the disease is still localized and amenable to operative treatment.

One case was interesting from the difficulty of its diagnosis. The patient noticed first a gland in the axilla which was somewhat enlarged and slightly sensitive. When this was first seen examination of the breast was made with negative results. Subsequently the breast was examined on one or two occasions, and absolutely no enlargement could be found anywhere.

The patient was seen by another surgeon in order that the question of possible carcinoma of the breast should be thoroughly considered, and still no point of disease in the breast could be found. It was finally decided to remove the gland in the axilla and by microscopical examination determine the character of its enlargement. This was done. The gland was found to be cancerous, and the whole breast, with the axillary contents, was at once removed. Deep down, close to the pectoral muscle, there was found a minute nodule of carcinoma which had served as the primary seat for the disease.

In all cases of doubt it is a good plan to have a microscope at hand for the immediate examination of any suspicious point during the operation. Usually, however, the dense gray nodule with opaque yellow tracery upon it is so characteristic that the diagnosis can be made with certainty by macroscopic appearances.

Among the above cases were two instances in which the disease appeared in sisters, a fact which is of interest in connection with the question of inherited tendency to the disease.

AN EXPERIMENTAL STUDY OF THE RESPIRATORY FUNCTIONS OF THE NOSE.<sup>1</sup>

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(Concluded from No. 19, p. 460.)

## II. THE PHYSIOLOGICAL ALTERATIONS IN INTRA-NASAL AIR-PRESSURE DURING RESPIRATION.

THE statement is made by Donders, and quoted in most standard text-books on physiology, that during inspiration a negative pressure exists in the nasal cavities amounting to one millimetre of mercury, and during expiration a positive pressure of two to three millimetres. This observation was confirmed by Braune and Clasen and also by Macdonald, with the modification that in the presence of anterior nasal obstruction the negative inspiratory pressure exceeded the positive expiratory pressure.

In the writer's experiments on this subject water manometers were employed in place of mercurial. Since water is thirteen times lighter than mercury, the excursions of the column of water are thirteen times greater than those of a column of mercury, and consequently are recorded with less relative error.

Placing the manometer in connection with the naso-pharynx of a healthy adult male, the writer obtained the following figures as the mean of numerous trial:

Quiet respiration:	
Inspiration =	-6 mm.
Expiration =	4
Deep respiration:	
Inspiration =	-30 mm.
Expiration =	20

These figures represent the maximum point reached in the excursion of the column of water, but do not indicate the actual force expended in the two phases of respiration. At the moment of *inspiration* the negative pressure immediately rose to six millimetres and quickly fell to three millimetres from which point it slowly sank to zero. At the moment of *expiration*, the positive pressure quickly reached four millimetres and remained nearly at that point, as represented in the diagram, for the greater part of the expiration. Thus the mean of the inspiratory excursion is distinctly less than the mean of the expiratory excursion.

If the nasal passages are equally permeable and one nostril be connected anteriorly with the manometer, respiration through the free nostril produces manometric excursions proportionate to those obtained in the naso-pharynx, that is to say, —12 millimetres for inspiration and eight millimetres for expiration. If this proportion be indicated by a fraction, one finds respirations of various depths still represented by multiples of  $\frac{2}{3}$ .

By self-observation one can become convinced that the maximum of inspiratory rarefaction is quickly attained, but quickly lost so soon as the inspiratory stream is established. The expiratory current, while of less incipient force is yet better maintained for the period of its duration.

These results were confirmed in experiments upon females with costal respiration as well as in the case of males with diaphragmatic respiration.

<sup>1</sup> Awarded the Boylston Medical Prize of Harvard University, 1896. Extract from announcement of the Board: "By an order adopted in 1836, the Secretary was directed to publish annually the following votes: (1) That the Board do not consider themselves as approving the doctrines contained in any of the dissertations to which premiums may be adjudged. (2) That in case of publication of a successful dissertation, the author be considered as bound to print the above vote in connection therewith."

## PATHOLOGICAL VARIATIONS IN INTRA-NASAL AIR-PRESSURE.

Inasmuch as the manner of breathing of each individual is dependent upon a natural or acquired habit, peculiar to the person in question, absolute figures denoting respiratory alterations in air-pressure are out of the question, even under wholly physiological conditions. In any case we must be satisfied with an approximate mean. Experiments instituted therefore for the purpose of comparing abnormal with normal pressure-changes, must inevitably include considerable error, owing to the fallacy involved in attempting to attain absolute results from relative and variable factors.

Realizing the impossibility of obtaining even approximate determinations with the available out-patient material, the writer in order to study pressure alterations under various conditions, constructed an apparatus in imitation of the nasal passages, by means of which intra-nasal pressure-phenomena could be produced. As seen in the diagram, two glass tubes, each 8 cm. in length, 1 cm. in diameter, and provided with a lateral tubulature for connection with a manometer, are placed side by side and represent each a nasal passage.

At one end the orifices of both tubes constituting the artificial choanæ are by rubber connections made to communicate with a single glass tube, which is thus common to both the parallel tubes and forms the artificial naso-pharynx. When this tube is placed in the mouth of the experimenter and oral respiration practised, there will pass through the artificial nasal passages a to-and-fro current of air corresponding to inspiration and expiration. In a normal nose, the narrowest portion of the passages is anteriorly, at the vestibular constriction. By placing, therefore, in an analogous manner, an obstruction in the artificial vestibule of such a size

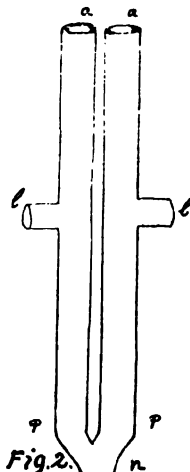


FIG. 2. a, a, anterior orifices. l, l, lateral tubulatures connecting with manometers. p, p, posterior orifices, or choanæ. n, naso-pharynx.

that quiet respiration through the tubes effects pressure variations in each manometer of 6 mm. and 4 mm. we have evidently reproduced the normal intra-nasal pressure conditions. We can furthermore, by placing obstructions in various places, register by the manometers the effects of anterior bilateral, or anterior unilateral, stenosis and similarly posterior bilateral, and posterior unilateral, stenosis. The results obtained may be thus graphically represented:

In Fig. 2 is seen the apparatus arranged as if for normal respiration. In quiet respirations the manometers showed:

		Left.	Right.
Inspiration	:	-6	-6
Expiration	:	4	4

In Fig. 6 an obstruction is placed behind the manometric opening on the right. Quiet respiration:

		Left.	Right.
Inspiration	:	-9	-3
Expiration	:	6	2

Here it is evident that anteriorly on the right the



pressure variations are half the normal, and that this loss has been transferred as a gain to the free side.

In Fig. 4 there is a marked increase in pressure-variation behind the stenosis:

Inspiration	:	:	:	:	:	Left.	Right.
Expiration	:	:	:	:	:	-9	-12
	:	:	:	:	:	6	8

In Fig. 3 there is a bilateral anterior obstruction, producing an increase in pressure behind it represented by the figures:

Inspiration	:	:	:	:	:	Left.	Right.
Expiration	:	:	:	:	:	-12	-12
	:	:	:	:	:	8	8

If, as shown in Fig. 5, there be a posterior obstruction producing nearly complete stenosis, we obtain the following interesting results:

Inspiration	:	:	:	:	:	Left.	Right.
Expiration	:	:	:	:	:	-1	-1
	:	:	:	:	:	-1	-1

As would be naturally expected in this case, the minus pressure of inspiration is greatly reduced, being but  $-1$  mm., as compared with  $-6$  mm. under normal circumstances. Paradoxical as it may seem, however, it is found that expiration exerts also a negative pressure of  $-1$  in place of a positive pressure upon the lateral walls. The principle underlying this phenomenon is undoubtedly similar to that by which air is exhausted in the water-aspirator.

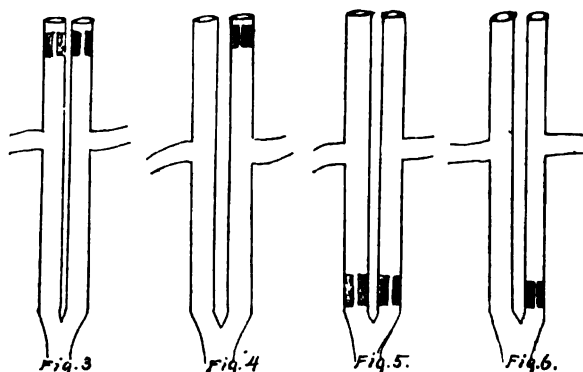


FIG. 3. Anterior bilateral stenosis simulating collapse of alve.  
FIG. 4. Unilateral stenosis simulating anterior deviation of septum.  
FIG. 5. Posterior bilateral stenosis simulating adenoid enlargement.  
FIG. 6. Posterior unilateral stenosis, as in enlargement of turbinates.

Thus, by varying the situation of the stenosis, the pressure-conditions obtaining in different clinical forms of obstruction can be ascertained. It remains to be seen in what manner these results can be practically utilized in the study of morbid conditions of the nose.

Reproduction of the general stenosis of hypertrophic rhinitis, or of the general abnormal patency of atrophic rhinitis, would teach no principle not already plainly apparent. No tests are needed to show that the former condition is attended with greater and the latter with less pressure-alteration than is the normal nose.

In the case of anterior bilateral stenosis, experiment, as indicated by Fig. 3, shows increased pressure alterations so long as nasal respiration is maintained; but if the stenosis is so marked as to prevent nasal respiration, these alterations will, of course, not occur. In the few clinical examples of this form of obstruction that have come under the author's notice, it has not been possible to discover any noteworthy structural abnormalities attributable to the stenosis. Naturally if, in this variety of constriction, respiration were

at times nasal and at others oral, the corresponding intra-nasal pressures would tend to nullify each other in their ultimate effects.

There are, however, at least two configurational abnormalities of the upper air-passages in which a knowledge of the pressure-phenomena within the nose appears to throw light upon the etiology of associated structural alterations. These are hypertrophy of the pharyngeal tonsil, and simple anterior deviations of the septum.

In attempting to account for the facial peculiarities characteristic of adenoid enlargement in young persons, Meyer stated it to be the result of disuse of the nose; David, to be the result of faulty development. Subsequent opinion has inclined to the views of Meyer. It has not, however, so far as the writer is aware, been explained in what manner nasal respiration regulates intra-nasal blood-supply, and consequently controls the nutrition of the nasal structures. During the present investigations, the thought has suggested itself that in these respiratory variations in air-pressure may be found the factor sought. As sufficiently evidenced by the local hypertrophies characteristic of certain trades, the prolonged continuance of alterations in pressure promotes nutrition and growth. If, under definite constantly-acting physiological variations in air-pressure, the nasal structures attain a certain degree of development recognized as normal, it would appear thoroughly in accordance with natural laws that any constant increase or decrease in these physiological pressure-variations should be followed by corresponding modifications of nutrition, and in early life, at least, by excessive or incomplete development.

As proved by the preceding experiments, post-nasal stenosis, even though insufficient to prevent nasal respiration, is attended by decreased alterations in intra-nasal pressure. Breathing through the nose can go on, even though the minus pressure of inspiration be  $-1$  mm. and the pressure of expiration be  $0$  or slightly negative. The difference in force actually exerted in the course of a year upon the structures within the nose in this condition of stenosis, as compared with the force normally exerted, would amount to four kilometres distance in the excursion of the manometric column of water.

In complete posterior obstruction, or after the establishment of mouth-breathing, pressure-variations in the nose of course do not occur.

The preceding supposition is favored by the fact that the structures affected by post-nasal stenosis are the ones subject to normal pressure-variations. The narrowness of the nose is in front of the normally-developed root, which by contrast appears unduly broadened. The septum and floor of the nose by their failure to develop adequately, may permit an undue upward growth of the hard palate. The flattened cheeks may be the result of faulty growth of the walls of the maxillary sinus.

Simple semilunar deviations of the septum are with great frequency associated with enlargement of the anterior end of the middle turbinate opposite the concavity and with a diminution in size of the corresponding structure on the side opposite the septal convexity.

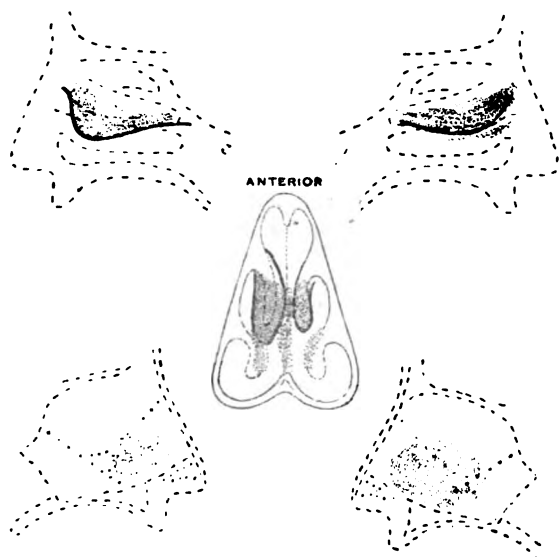
From a comparison of the form of stenosis obtained in this instance, with the condition depicted in Fig. 6, it might appear reasonable to attribute the alterations in the middle turbinates to a modification in the

pressure-variations normally existing on the two sides, on the principle explained in the case of adenoid obstruction. On the other hand, in the adult, inflammations play so large a part in inducing alterations of form within the nose, that the absolute demonstration of the aforesaid changes in the turbinates as the sequel to a purely nutritive disturbance, is difficult if not impossible.

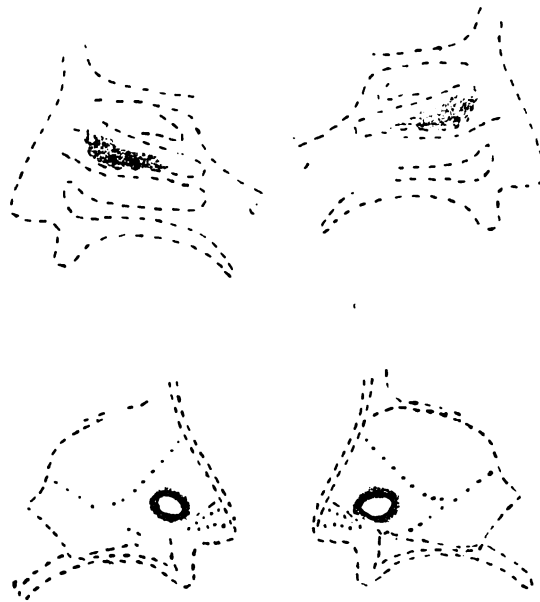
### III. THE ROUTE TAKEN BY RESPIRED AIR WITHIN THE NOSE.

The experiments of Braune and Clasen and of Franke show that, under normal conditions, the inspiratory stream of air passes by the middle and upper turbinated bodies, partly also through the middle

meatus appears to be deflected by the alæ and constricting band against the septum in a more or less sharply circumscribed fashion. From this point the current is again turned upward and outward against the anterior end of the middle turbinate. Although after an ordinary inspiration in the powder-laden atmosphere, these two places are whitened, yet no deposit is discoverable posteriorly in the nares or pharyngeal vault. In marked atrophy of the turbinates and in the normal nose, only after repeated inhalations, when the dry powder has so covered the moist surfaces that presumably no more can adhere, a deposit is visible by posterior rhinoscopy. One finds, furthermore,



H. S., female, thirty-five, American.  
Tip of nose somewhat tilted; nostrils wider than normal, from slight development of constricting band.  
Turbinates essentially normal, except for anterior hypertrophy of both middle.  
Powder inhalation as by diagram. Practically a normal distribution.



K. G., female, thirty-four, Nova Scotian.  
Anterior nares slightly widened.  
Turbinates considerably atrophied, especially on right.  
Septum straight, with simple perforation.  
Powder inhalation entirely avoids lower turbinates on both sides; forms a distinct margin around perforation.

meatus, but avoids the lower meatus and lower turbinate, except for a small portion of the latter posteriorly.

Numerous observations have been made by the writer in connection with this subject, both upon normal and abnormal nasal conditions. The patient was made to breathe quietly in an atmosphere containing in suspension compound stearate of zinc, which from its fineness, lightness and adhesive properties was found most suitable to demonstrate the path pursued by the inspiratory current. After one to three inspirations had been performed, a careful anterior and posterior rhinoscopic examination was made and the localities of deposit of the powder indicated upon prepared diagrams of the nasal chambers.

The accompanying diagrams are selected from a large number, and present examples of localization of inhaled powder encountered under normal and pathological conditions.

In examining these diagrams, one's attention is first drawn to the two localities which under most circumstances bear the brunt of the incoming stream of air. These are the anterior end of the middle turbinate and the cartilaginous portion of the septum. That part of the powder which manages to pass by the vib-

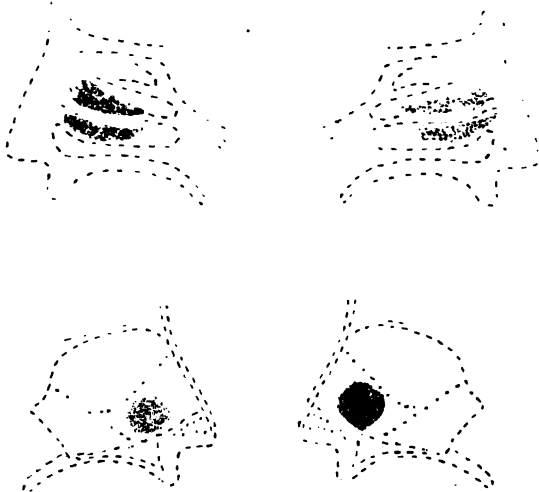
under these circumstances, that in the larynx, the inter-arytenoid region receives the main deposit.

It thus appears that the normal nose, in an atmosphere not excessively dust-laden, is a very nearly, if not wholly, complete filter for the inspired air.

With respect to the differences in course pursued by the nasal current, interest centres in the varying extent to which the inferior turbinate receives a deposit and also in the sharpness of limitation of the deposit upon the septum. It does not appear possible from the author's observation to define distinctly the causes underlying these variations. In the majority of cases, however, the following factors seemed to exert an influence: (1) In upturned anterior nares the course of the current was lower, and involved more of the lower turbinate than in normal horizontal anterior nares. (2) A wide alæ with well-developed constricting band, seen most commonly in negroes, favors a sharp limitation of the powder upon the septum.

That any connection exists between this respiratory route and pathological conditions within the nose, does not, with one exception, seem indicated by the clinical evidence thus far collected by the writer. This exception has reference to the connection probably existing between the strikingly circumscribed

localization of the powder upon a certain part of the cartilaginous septum and simple perforating ulcer which develops at the same spot. This point is often marked, even in the normal nose, by a small scab of dried secretion. The desiccating influence of the inspired stream of air must be very great when brought to bear upon the septum with the sharpness of limitation apparent in some of the diagrams. While the suggestion has been made that the impact of the current of air against the nasal septum may favor the development of ulcer by depositing micro-organisms in this situation, it does not appear that attention has hitherto been called to the desiccating influence of the inspired current upon the nutrition of the locality in question. Crust-formation must, in the writer's opinion, produce constriction of the superficial vessels in a manner similar to that generally believed to



A. R., female, twenty-four, American.  
Nares and turbinates normal.  
Powder inhalation as by diagram. Distribution practically normal, except for the rather unusual amount on the lower turbinates.  
Septum straight; bears a dry crust on site of powder localization.

inhibit nutrition of the nasal structures in atrophic rhinitis. The attempt to remove the scab from the septum not uncommonly involves a wounding of the mucous surface. When once erosion has occurred in a locality already so poorly nourished and continually exposed to further desiccation from the inspiratory current, it is not surprising that the necrosing process should often end only after perforation of the septum.

Since the variations in the path of the respiratory current are thus seen to be comparatively slight, it is not probable that olfaction can be materially affected by them, excepting in the case of obstructions necessitating an actual deflection of the stream of air. Even then the expiratory sense of smell is preserved (provided the special nerves and their terminals in the posterior portions of the olfactory regions be intact) if the given odor be sufficiently strong, and is referred as a sensation of taste to the soft palate and base of the tongue.

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#### A CASE OF TUBERCULOSIS OF THE CONJUNCTIVA, PROBABLY PRIMARY, FOLLOWED BY GENERAL INFECTION AND DEATH.<sup>1</sup>

BY FREDERICK E. CHENEY, M.D.,  
*Surgeon Massachusetts Charitable Eye and Ear Infirmary; Assistant in Ophthalmology, Harvard Medical School.*

TUBERCULOSIS of the conjunctiva is sufficiently uncommon, in this country at least, to make it desirable that well-authenticated cases be recorded. As far as I am able to learn, only two cases have been previously reported by American oculists, one by Dr. Herman Knapp in 1890,<sup>2</sup> and the other by Dr. Swan M. Burnett in the same year.<sup>3</sup>

My patient, a little girl eleven years of age, came to the Massachusetts Charitable Eye and Ear Infirmary, February 20, 1895. For about three months it had been noticed that the left eye was watery, and at times discharged a little yellowish matter. Of late the upper lid had drooped a little. Upon examination there was found to be a slight ptosis and edema of the left upper lid; and when the lid was everted a lesion was discovered on the conjunctival surface, which presented the following appearances: Situation, at the outer side of the centre of the tarsal cartilage, and nearer the upper than the lower border. Shape, a fairly well defined oval about six millimetres horizontally by four millimetres vertically. The borders were slightly elevated, and the surface was covered with numerous, small, rounded granules, grayish-yellow in color, rather hard and gristly to the touch, and bleeding on slight irritation. The conjunctiva of both lids was moderately injected, and there were a few shreds of thick, stringy, yellowish matter in the retro-tarsal fold. The globe was perfectly round. Examination of right eye negative. Glands in front of left ear somewhat enlarged. The diagnosis was made of probable tuberculosis of the conjunctiva.

An examination of the child's general condition was made by Dr. J. J. Minot at the Massachusetts General Hospital two days later, with the following result: Four years ago she had measles, followed by bronchitis. Since then she has had an occasional slight cough, but it has been no worse of late; no sputum; no pain; appetite poor; constipation; frequent nose-bleed. Examination of lungs negative. Temperature 99.4°. Family history negative. Two older sisters living, both perfectly well. The mother, who is an intelligent woman, says she is very sure there has never been consumption in either her or the father's family. A number of slides were prepared from the conjunctival ulcer and examined at the hospital; also at the Medical School by Dr. McCullom. Numerous tubercle bacilli were found, which left no doubt as to the diagnosis of tuberculosis of the conjunctiva. Examination of nose and throat by Dr. Algernon Coolidge, Jr., gave a negative result.

<sup>1</sup> Read before the American Ophthalmological Society, July 18, 1896.

<sup>2</sup> *Arch. Opth.*, xix, p. 78.

<sup>3</sup> *Loc. cit.*, p. 113.

The patient was examined again March 2d. There was no marked change in the appearance of the ulcer, but along the upper inner border of the tarsal cartilage there had developed a few small, trachoma-like, granular elevations.

On March 7th the growth had increased considerably in size, and was more grayish in color. There were also two small, round, grayish ulcers near the upper inner border of the tarsus, which had apparently resulted from a breaking-down of the granular elevations noticed at the last visit. A few swollen glands on the left side of the neck were noticed for the first time.

On March 9th, under ether, the large tuberculous area was carefully dissected out, as were also the small ulcers at the inner angle of the lid. There was no return of the growth over the area first noticed; but a number of small ulcers appeared from time to time at the inner upper tarsal border, which were removed and the surfaces cauterized.

After April 6th there was no recurrence of ulceration or granulation of the conjunctiva. Under tonics and good food the child improved considerably in her general appearance, but the enlarged glands in front of the left ear did not disappear, and those of the neck continued to increase in size, not only on the left but on the right side as well. She was last seen in the hospital May 26th, when there was a very decided change for the worse in her condition. For the last two weeks the appetite had failed, and she had lost flesh rapidly. There was a marked increase in the size of the glands of the neck, especially on the left side; no cough; slight elevation in temperature. Examination of chest by Dr. Minot negative. Eye perfectly normal.

The child died July 4, 1895. The mother wrote that the throat became very troublesome soon after her last visit at the hospital. She experienced great difficulty in swallowing, and two days before her death "her throat looked a grayish-white color." She only coughed when an attempt was made to swallow. Dr. Charles Jordon, her physician, wrote me that the cause of death was "tuberculosis involving the right lung and, to all appearances, the mesentery glands."

It is, of course, impossible to say with certainty that this case is one of primary tuberculosis of the conjunctiva, though it seems to me probable that it is. Repeated examinations of the chest, throat and nose were negative in result; and, aside from an occasional slight cough, nothing in the child's condition suggested trouble with the lungs or throat. A thorough removal of the tubercular conjunctiva certainly did not prevent a general tuberculosis; but when it is remembered that the glands in front of the ear were involved when she was first seen, and those of the neck soon after, the extension of the process is easily accounted for. The early removal of these glands might perhaps have given a different result; and in a similar case it would certainly be the course that I should advise.

THERE are said to be 25,000,000 people in this country with gold-filled teeth, whence it is figured out that about \$100,000,000 worth of the precious metal is thus removed from circulation. It is therefore suggested that gold worth at least \$50,000,000 could be recovered from American grave-yards if the teeth of the last two or three generations were collected.

## Clinical Department.

### A CASE OF DEATH UNDER ETHER ANESTHESIA.

BY EDGAR GARCEAU, M.D., BOSTON,  
*Surgeon to Out-Patients, Free Hospital for Women.*

THE following case is reported on account of its rarity.

The patient was a woman forty years old, the mother of several children, the youngest of whom was ten years old.

For five or six years she had been suffering from a fibroid tumor of the uterus, which had given rise to severe hemorrhages at the time of her menstrual periods. These hemorrhages had been temporarily checked on different occasions by curetting and by other palliative measures, but had finally resisted every mild method of treatment and had become more and more severe, until finally she was having her periods at intervals of ten days, and was flowing excessively each time. No sooner had she partially recuperated from the exhausting effects of one period than the next one became due, which in turn left her weaker than the previous one. Under these circumstances she became greatly anemic and very feeble, and finally confined to her bed.

When the author first saw her she had rallied somewhat from the period which had terminated ten days before, but she was in a very miserable condition. The next period was hourly expected. She was a short, very stout woman, weighing perhaps one hundred and ninety pounds. Her mind was rather apathetic, though she was at times quite cheerful, and she answered questions readily. The skin was of a pale-yellowish hue. The eyeballs were white. Her pulse was 95, and was of fairly good strength; the beat was regular; it was not a bad pulse. There were hemic murmurs heard over the heart. What was particularly noticed was her great weakness; she was utterly exhausted and reduced to the last extremity. She was living on stimulants and liquid nourishment.

Something had to be done to check the hemorrhage at the next period, for she certainly would not be able to stand any further drain upon her system. It was out of the question to try the Apostoli treatment by electricity; there was no time. A hysterectomy was not to be thought of on account of the magnitude of the operation. Oöphorectomy was put aside for the same reason. The best thing to do seemed to be to ligate the uterine arteries *per vaginam*. This is a simple operation, and being a vaginal extra-peritoneal one, does not involve much shock. She was accordingly prepared for this operation.

Examination showed a uterus freely movable, reaching to within an inch of the umbilicus. A sound entered two inches, and could be introduced three inches more by bending it sharply forward; the fibroid was, therefore, probably submucous.

Just before the operation the pulse was 95 and of fairly good strength; it certainly was not a pulse which would lead one to suspect that the operation would not terminate successfully. Nevertheless, in view of her poor condition every preparation was made for emergencies. The instruments were laid out, the table prepared, and sterilization of hands done before the ether was administered. Strychnia, brandy, and sterilized salt solution, were in readiness.

The ether was poorly taken from the start; she breathed badly and resisted a good deal. Finally, she got under the influence of the anesthetic, and the operation was begun. The pulse was still good. Hardly, however, had the vagina been cleansed and the tenaculum forceps seized the cervix to draw it down, when suddenly the pulse failed all at once, and she stopped breathing. Both happened simultaneously. Without loss of time, for everything was in readiness, artificial respiration was performed, salt solution injected subcutaneously and by rectum, an eighth of a grain of strychnia injected subcutaneously, and a second injection of brandy and black coffee introduced into the rectum. It was useless. She was dead.

The cause of death in this case is to be sought in the great weakness of the patient rather than in the condition of the heart. An interesting point is the fact that both pulse and respiration failed *together* and not, as is usually the case, the respiration first and the pulse second. She was decidedly an unfavorable case for operation and yet misleading in certain respects. For instance, while taking ether she resisted a great deal, so much so in fact, that it required considerable exercise of strength to hold her on the table in position. Then again, her heart gave no indication whatever that a fatal termination might be anticipated. The shock of operation may be disregarded entirely as a cause of death; it was not even begun. Being a short, stout woman, extremely anemic, the vital forces were at a lower ebb than they would have been in a thin woman, other things being equal. It is in this that the explanation of the disaster must be sought; yet the operation was justifiable. She certainly would have died had she been allowed to go through the perils of another menstrual period. It was a desperate case and it required a desperate remedy.

#### NOTES ON ANESTHESIA—OXYGEN AFTER ETHER.

BY J. B. BLAKE, M.D.,  
Surgeon to Out-Patients, Boston City Hospital.

THE administration of oxygen with or after ether seems to have been considered, and to a slight degree practised, many years ago. It was, indeed, recommended by Dr. C. T. Jackson, in 1847, but was soon abandoned. Recently, however, it has found new favor, and flattering reports of its results have appeared from time to time in medical journals.

In the *Medical Record*, No. 1301, 1895, Dr. C. S. Cole reports a series of cases in which oxygen and ether were administered simultaneously. He found that not only were the after-effects less, but that the amount of ether necessary to produce anesthesia was considerably diminished.

At the suggestion of Dr. H. L. Burrell, oxygen was given after ether during the months of January, February and March, 1896, in 25 cases on the Second Surgical Service of the Boston City Hospital. The cases were taken without choice as they came to operation, and varied in severity from the passage of sounds to various capital abdominal operations. The amount of ether given varied from two ounces to two pints and the time of the operations from ten minutes to one and one-half hours. The apparatus used consisted of the cylinder, mouth-piece and wash-bottle, which is so commonly employed to administer oxygen in pneumo-

nia. The duration of the oxygen inhalation was from ten to thirty minutes, and the amount consumed, from ten to twenty gallons. It is best to apply oxygen immediately after ether is removed, but in most of the cases here reported this was not possible; as a rule, ten to fifteen minutes elapsed while the patient was being transferred from the operating-theatre to the ward. If oxygen could have been administered in all cases immediately after ether was removed, the results would perhaps have been better.

After the first few cases the mouth-piece ordinarily used with the oxygen apparatus was abandoned, and a soft-rubber catheter attached to the oxygen tube, was introduced through the nose into the pharynx. This was a suggestion of Dr. W. A. Morrison of East Boston, and undoubtedly gave better results than did the older form of inhaler. The patients did not feel the introduction of the catheter, nor did they as consciousness returned, manifest discomfort at its presence.

It was the custom to administer oxygen until the patient could answer questions rationally. It may be further continued until the odor of ether disappears from the breath; as a rule, however, this will require from thirty to forty gallons, in case of anesthesia of average duration—one hour, for instance.

In a majority of cases, both ether and oxygen were administered, and results recorded by Dr. Mosher, surgical dresser of the Second Surgical Service. The points observed were (1) the time of convalescence; (2) the result of the oxygen upon the circulation and respiration; (3) the extent of the unpleasant after-effects.

#### RESULTS OBSERVED.

*Time.*—The time of convalescence was unquestionably reduced. With rare exception, patients answered questions rationally in from ten to twenty minutes.

*Circulation.*—A rapid improvement in color and pulse often occurred. In one case, however, in which the patient's color had been bad during the operation, it did not change noticeably after the oxygen was exhibited.

*Vomiting.*—In 15 cases there was no vomiting; in 4 cases, slight vomiting during oxygen; in 6 cases vomiting after oxygen, always moderate. Excessive or severe vomiting did not occur.

#### CONCLUSIONS.

In so far as it is possible to make deductions from so small a number of cases, the following conclusions were drawn:

Oxygen has a positive value in shortening the time of returning consciousness and in diminishing the unpleasant after-effects of ether.

It is a good cardiac and respiratory stimulant.

It is indicated in threatened collapse.

It is appropriate in all private cases.

In hospital practice its effects are not sufficiently beneficial to justify the expense which its use as a routine measure would entail.

PHILADELPHIA POLYCLINIC.—The faculty of the Philadelphia Polyclinic and College for Graduates in Medicine has established a lectureship on defects of speech, and Dr. G. Hudson Makuen has been elected to the position. Dr. A. O. J. Kelly has been elected adjunct professor of pathology.

## Medical Progress.

### RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND WM. DUDLEY HALL, M.D.

#### A CONTRIBUTION TO THE PATHOLOGICAL ANATOMY AND THE BACTERIOLOGY OF PURULENT KERATITIS IN MAN.<sup>1</sup>

UHTHOFF and Axenfeld have studied the microscopic changes in 11 cases of suppurative keratitis, of which five were typical serpiginous ulcers in a very advanced stage; four of keratomalacia, characterized by ulceration and necrosis of the cornea, especially that portion uncovered by the palpebral opening; two cases of commencing panophthalmitis consecutive to severe septic corneal ulcers; and one case of keratomycosis aspergillina. They have obtained their material by enucleation, exenteration or ablation of the part involved. The clinical course of the disease is given in detail, together with the results of the microscopical and bacteriological examinations of each of the 11 cases. As a result of their microscopical work they have been able to prove that the typical serpiginous ulcer extends laterally rather than in depth, and that at one extremity the process is active and progressive, while at the other, there is already advanced cicatricial formation. Sometimes the border of the ulcer is undermined in the direction of its advance. In opposition to the serpiginous ulcers those which are characteristic of keratomalacia are deep, crater-form, perforating or about to do so. There is a tendency to necrosis of the entire thickness of the cornea at the location of the ulcer. Fifty cases were examined by them bacteriologically, of which 35 were typical serpiginous ulcers, 10 keratitis with hypopyon, two of keratomalacia, one of keratomycosis aspergillina, and two of commencing panophthalmitis consecutive to corneal ulcers. The pathogenic microbes met with in these 50 cases were the following:

(1) In 26 cases exclusively, the pneumococcus of Fränkel-Weichselbaum; two of the 26 were from the two cases of commencing panophthalmitis and the other 24 were from the serpiginous ulcers.

(2) Seven times other microbes were found together with the micrococci; and in five of the seven it happened in cases of serpiginous ulcer.

(3) Thirteen times other microbes than the pneumococci were found, four of which being in cases of serpiginous ulcers, and in three of the latter four the streptococcus pyogenes was the microbe found.

(4) Four times the bacteriological examinations remained negative, two of these being in cases of serpiginous ulcer.

Thus they find that in 29 times out of 35 the pneumococcus is the pathogenic agent in serpiginous ulcers. They do not hesitate to declare that this microbe is the principal cause of the serpiginous ulcer. They even doubt the possibility of other microbes giving rise to ulcers of this description. They even seek to explain the clinical characteristics of these ulcers by the biological properties of the pneumococcus; that is, the rapidity by which the micro-organism is destroyed by auto-intoxication, etc.

They have not yet succeeded in producing in the rabbit a typical serpiginous ulcer by inoculating the

cornea with pneumococci. They have obtained a hypopyon keratitis, which, however, retrogrades after a few days. Sometimes an interstitial annular abscess forms, which readily reabsorbs. The authors do not believe the presence of the pneumococci in these ulcers to be due to their having been carried in at the time of the original trauma, but they are rather of the opinion that the abrasion of the corneal epithelium becomes secondarily affected by the microbes which are frequently in the lachrymal passages and the conjunctival cul-de-sac. It must be noticed that, in perfect agreement with Leber, they have never found the microbe in hypopyon when there did not exist a perforation of the cornea. The keratomycosis aspergillina occurred in a girl eight years old, and appeared as an indolent ulcer, of a singularly granular-appearing surface, surrounded with a yellowish zone of infiltration that had developed a short time after the little patient had been struck in the face by a handful of earth thrown by another child. In attempting to remove a portion of the ulcer for bacteriological study the infiltration detached itself entirely from the cornea. It was then seen to be a tangle of mycelium of the aspergillus fumigatus, as examinations afterwards proved it to be. This case is the fourth of its kind, the others being Leber's, Uthoff's and Fuch's. After ablation of the infected area, cure was rapid with good ultimate vision.

#### THE PNEUMOCOCCUS OF FRÄNKEL AS A FREQUENT CAUSE OF ACUTE CATARRHAL CONJUNCTIVITIS.<sup>2</sup>

In a very interesting article Gifford, of Omaha, states that although in and about New York acute catarrhal conjunctivitis is caused almost exclusively by a small bacillus which was first studied by Weeks, and that the same is true for Paris, according to Morax and Beach, still work which has extended over seven or eight years makes him feel certain that this does not apply to Omaha. He examined 40 cases in all, mostly bilateral; but as each was selected from groups they probably represent 200 of the same etiology. In all but four of these the discharge was found by the microscope to contain generally in large numbers and in a state of purity the pneumococcus of Fränkel, and cultures made on agar-agar and serum in 12 of these cases show the germ in a state of purity. He carried the disease from eye to eye by means of the discharge and found the pure germ in the inoculated eyes nearly always. He also produced the disease in man with pure cultures of the third generation.

Morax<sup>3</sup> was probably the first to direct attention to this germ as a probable cause of conjunctivitis, and he then described four of Parinaud's cases, the discharge of which contained the pneumococcus in great numbers. The patients were all children and the disease monocular. Parinaud<sup>4</sup> describes an ophthalmia neonatorum, with coryza and lachrymal obstruction, in which there were found great quantities of the pneumococcus. Gasparini<sup>5</sup> describes six cases, two being children where the pneumococcus seemed to be the cause of a catarrhal conjunctivitis and later,<sup>6</sup> he reports other cases, some with serious corneal complications. Gasparini also found it in ophthalmia neonatorum where he expected to find the gonococcus and in exacer-

<sup>1</sup> Arch. of Ophth., July, 1896.

<sup>2</sup> Thèse de Paris, 1894.

<sup>3</sup> Annales d'Oculistique, December, 1894.

<sup>4</sup> Annali di Ottal., xxiii, Fasc. 6.

<sup>5</sup> Loc. cit., xxiv, Supplement, and xxv, Fasc. 1.

<sup>1</sup> A. von Graefe's Arch., t. xlii, I, 1896; reviewed in Rev. Gen. d'Opt., August, 1896.

bations of trachoma. Gifford claims priority for his work in that "in none of the foregoing articles is any mention made of attempts to cause catarrhal conjunctivitis in man or the lower animals, nor of attempts to carry the disease from eye to eye in man."

In a more recent paper by Axenfeld there is described a school epidemic of pneumococcus in which mention is made of unsuccessful attempts to convey the disease to man with the secretion and cultures. Uhthoff and Axenfeld,<sup>7</sup> in an article on infectious keratitis, mentions pneumococci which in rabbits cause a peculiar localized thickening of the conjunctiva, grayish-red in color, but not like a catarrhal conjunctivitis. Clinically a pneumococcus conjunctivitis presents the following appearances: "A red, watery, uncomfortable eye, with some puffiness of the lids; a rather profuse muco-purulent, stringy discharge; with the conjunctiva of the folds generally only moderately swollen, the ocular conjunctiva congested, often with thinly spread out hemorrhages beneath it. From this average there is much variation in both directions." The incubation is about forty-eight hours, and the symptoms reach their height a day or two after. A collyrium of zinc, one grain to one ounce, gives the best results. The diplococci have well-marked capsules, slightly elongated but not so sharply pointed as descriptions of this germ would lead one to expect. Some seem to be short bacilli, but with care appear as being double. Occasionally they are in pus corpuscles and in the epithelial cells. Contaminations are rare in the cultures. Blood-serum, serum-agar and bouillon answer very well, but they do not grow well on agar or glycerine-agar, and not at all on gelatine. For staining, the Gram method, or dilute carbol-fuchsin is recommended.

#### ABOUT THE ETIOLOGY AND TREATMENT OF SOME FORMS OF PSEUDO-MEMBRANOUS AND MEMBRANOUS CONJUNCTIVITIS.

Pes, of Turin,<sup>8</sup> complains that the great differences in the clinical pictures has up to the present time greatly retarded an accurate classification of pseudo-membranous conjunctival inflammations. Lately the tendency has been to ascribe this condition to the bacillus of diphtheria, and to consider the greater or lesser activity of the same as responsible for the different degrees in severity of the condition. He states that in the normal conjunctiva are found virulent diphtheritic bacilli, and that there is a bacillus characteristic of the secretion of the Meibomian glands resembling those which earlier was considered to be the bacillus of xerosis. The author hints at the possibility of an identity of this bacillus with that of the diphtheria bacillus and the pseudo-membranous bacillus, recognizing the greater virulence of the diphtheria bacillus as being due to morphological variations.

The author has obtained a rapid disappearance of the symptoms by injecting five centimetres of Behring's serum, No. 1.<sup>9</sup>

Guttman<sup>10</sup> had under his care a child thirteen months old who five days after an onset of measles had a diphtheritic affection of one eye and a similar infiltration of the cheek about a scratch. Five centimetres of Behring's antitoxin, No. 2, were injected; but the process continued, and the nose and throat became affected. After four days ten centimetres of

antitoxin were injected, and the child died some days later. No benefit could be ascribed to the antitoxin. Coppez and Funk<sup>11</sup> have used the antitoxin in seven cases of diphtheria of the conjunctiva, and insist that the injections must be made early and before the cornea is involved in a streptococcus infection. Myles Standish<sup>12</sup> reported a number of cases of membranous conjunctivitis which had been examined bacteriologically, and it was a peculiar feature that some which presented the clinical picture of diphtheria were free from the characteristic organisms of that disease, while others which appeared only croupous in character were found to present Klebs-Löffler bacillus. Some were due to the staphylococcus or the streptococcus, and others were of a mixed infection. He suggests a readjustment of our nomenclature on bacteriological principles.

Despagnet<sup>13</sup> reported to Society of Ophthalmology of Paris ten cases of ocular diphtheria, that during the last eighteen months he had treated by antitoxic serum. In all cases the infiltration was superficial, with the exception of one which was interstitial. In four cases there was pure infection, once associated with staphylococci, once with a small coccus, once with streptococci and staphylococci, and three times with streptococci. All these patients received one injection of 10 cubic centimetres of serum, and one patient received two injections of 10 cubic centimetres. Through delay in injecting and neglect of parents, one cornea was lost. In two of the simple cases the membranes disappeared in from two to eight days, and in the associated cases they remained for two weeks. A folliculitis followed disappearance of the membrane. Iodoform ointment was the only other treatment.

(To be continued.)

### Reports of Societies.

#### BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. G. MUMFORD, M.D., SECRETARY.

REGULAR Meeting, Monday, May 4, 1896, DR. C. J. BLAKE in the chair.

#### FIBROID TUMOR OF OVARY AND FIBROID TUMOR OF UTERUS.

DR. JOHN HOMANS showed a large fibroid tumor of the right ovary weighing six pounds, removed April 30, 1896. He remarked upon the rareness of the tumor, having met with only four cases in some seven hundred ovariectomies. They are generally accompanied by more or less ascites. In this case there was considerable ascites; probably ten pounds or more of ascitic fluid ran out and was sponged out during the operation. The patient is making a rapid recovery.

The fibroid tumor of the uterus is much larger, weighing sixteen pounds. It is something more than fourteen inches long, and the uterine cavity removed is twelve inches in length and is very tortuous, turning at right angles. It would have been impossible to have passed a uterine sound for the purposes of

<sup>7</sup> Arch. of Ophth., xlii, I, 1896.

<sup>8</sup> Arch. f. Augenheilkunde, xxxii, I.

<sup>9</sup> Centralblatt f. Augenheilkunde, August, 1896.

<sup>10</sup> Archives of Ophthalmology, xxiv, 4.

<sup>11</sup> Arch. d'Ophth., xv, 5.

<sup>12</sup> Am. Ophth. Soc. Meeting, 1896.

<sup>13</sup> Annales d'Oculistique, July, 1896.



giving electrolysis *à la* Apostoli. There are many supplementary tumors hanging off from the outer surface of the main tumor, like large dewlaps, and of strawberry-red color, two of them as large as the fist. The vessels in the broad ligament looked very formidable, when the tumor was exposed to view by the abdominal incision. In removing the tumor the vagina was necessarily opened in order to remove the mass which filled the pelvic cavity and made the neck as large as an adult leg a few inches below the largest part of the calf. The vagina was sewed up as was also the peritoneal sac. The patient was thirty-eight years old, and is making a normal recovery.

## TWO EYE SPECIMENS.

DR. C. H. WILLIAMS showed two specimens: one a normal eye; the other a case of neuro-retinitis, with inflammation also of the ciliary region, the result of a penetrating wound of the eye by a bit of glass. These eyes, after removal, were placed in 5 and then 10 per cent. formaline solution for a few days; then in 33 and 50 per cent. glycerine for twenty-four hours each; then frozen, cut in two and mounted in three glass cells in glycerine jelly—a cover of white glass which serves as a background for the preparation, being cemented onto the open bottom of the cell with Canada balsam. This is known as the Priestly-Smith method of mounting, and eyes so prepared will last for years, and are very useful for demonstrating macroscopically the pathological changes in eye diseases.

In one of these specimens you will see that the cornea has been perforated near its border, and that a small piece of the iris is entangled in the wound, while just behind the iris and ciliary body near the wound about one-quarter of the vitreous is filled with a yellow collection of pus and inflammatory material. At the entrance of the optic nerve into the eye-ball the parts have become swollen, forming a papilla that projects forward into the vitreous while the retinal veins can be seen congested and tortuous. The other eye shows normal conditions.

DR. J. COLLINS WARREN read a paper on

THE DIFFERENTIAL DIAGNOSIS AND TREATMENT OF CANCER OF THE BREAST, WITH STATISTICS OF SIXTY-THREE OPERATIONS.<sup>1</sup>

DR. M. H. RICHARDSON: The question of recurrence after operations for cancer of the breast is certainly of the greatest interest. It is necessary, however, to throw out of consideration a large percentage of the cases—those cases in which the operation demonstrates their hopeless nature. In trying to determine the chances of permanent cure, it is clearly unfair to include in our statistics cases in which we leave behind masses of cancer which can be seen or felt—cases, in other words, in which the operation is incomplete. For instance, this morning I operated on a woman who apparently had no disease above the clavicle; yet at the completion of the dissection of the axilla I could easily feel with my finger a mass above the first rib, under the clavicle. The nodule proved to be a large one. The phrenic nerve went directly through it; it extended through the anterior mediastinum and involved the pleura and the lung. Cases like this included in the statistics of recurrence give a wrong impression; they give an impression of

recurrence when the disease has never been really removed. The case is one of continuance, not of recurrence; the operation was an incomplete one; death will soon inevitably follow. The case should not therefore be considered in the discussion of the advisability of operating upon mammary cancer.

I have no doubt that there are many cases of this kind—cases in which we remove the breast, the pectoralis major, the contents of the axilla, and even of the subclavian triangle, and yet in which the disease, seated as it is so close to the great lymph channels—the thoracic ducts—must have produced some internal metastasis. Cases of this kind, as I said before, ought not to be included in the consideration of the prognosis of mammary cancer. They may be fairly considered in connection with the question of surgical interference in cases of their kind, to determine whether there is any use at all in operating in such cases; but when we are trying to point out what to do in early cases of cancer—cases so recent that presumably the disease is confined either to the breast or to the breast and the axilla—we must not be deterred from operating by a large percentage of recurrences in cases practically hopeless in the beginning. If we could select such cases as that of Dr. Warren's, in which the disease was discovered at the very outset, and if we could demonstrate that we had gone in our operation as far as glandular complications had extended or even farther, then we should have, I have no doubt, a series of cases in which the statistics would be of the utmost value, and in which the percentage of recoveries would be, I believe, very high.

In connection with this subject I would mention another case which I operated upon this morning. It was a case of cancer of the breast. Thinking that I could feel something above the clavicle, I first dissected the subclavian triangle. There was nothing to be found there. I then opened the space between the sternal and clavicular portion of the pectoralis major. I there found a chain of glands gradually decreasing in size toward the axilla. These I dissected from the outer border of the first rib to the axilla; from the subclavian and from the axillary vessels. In this manner I cleared the space under the pectoralis major and about the pectoralis minor. Finally, I removed the breast and the axillary contents in a single mass. The cuts from below were then continuous with the one already made above. In this way every visible nodule and every vestige of the disease was removed by an operation of great magnitude. A case of this kind can and should be taken as a case upon which to base our statistics as to recurrence. By leaving out those cases in which it is clear that some of the disease remains, the percentage of our permanent cures will be greatly increased.

The question of the desirability of an operation in a given case, all things considered, is quite a different matter, for there are many reasons why the operation should be performed, even in those cases in which it is impossible thoroughly to remove the disease—for the relief of pain, for the removal of an offensive ulceration, for the prevention of hemorrhage, for mental effect, and for other reasons.

DR. WILLIAM M. CONANT read a paper on

## INFLAMMATIONS OF THE UTERUS AND TUBES.

DR. REYNOLDS: This subject, which as I understand Dr. Conant's paper is limited largely to what

<sup>1</sup> See page 481 of the Journal.

one might call active suppuration in the pelvis, is one I am very much interested in because my consultation practice has furnished me with a great many cases of pelvic suppuration after labor, and the gynecological service at the City Hospital has brought me in contact with a great many other pelvic abscesses. I think it is perhaps necessary to subdivide the cases a little. I was a little surprised to hear Dr. Conant and Dr. Richardson speak of purulent salpingitis as though it were the only form to be dealt with, and for that reason there was only one method of dealing with pelvic abscess. I think we must divide the cases into suppuration of the pelvic cellular tissue (which is rare), pus contained within the tube, and encysted peritonitis as a result of tubal disease; and I think the treatment varies radically. Abscess in the pelvic cellular tissue is undoubtedly rare. I doubt if it ever occurs except after labor or abortion, but it is not so rare that it can safely be left out of consideration; indeed, I have myself seen a considerable number of cases which could be demonstrated as cases of true pelvic cellulitis, and those cases I am confident should be attacked from the vagina only. The diagnosis between cellular abscess and intra-peritoneal abscess is most helped by a point which was first brought out by Henrotin, of Chicago, and which I have found very useful, that where the abscess is cellular one finds the cellular tissue of the pelvis thickened throughout, so that there is a firm and resistant mass between the rectum and vagina, along the base of the broad ligament, and down the sides of the pelvis, that is, involving all the septa which are dropped down from the roof of the pelvis. When this condition is found I think with safety we may consider the case one of true pelvic cellulitis. In these cases the posterior incision for vaginal hysterectomy through the vaginal mucous membrane, followed up by the finger after the manner of a bimanual examination, enables one to open the abscess and break down the phlegmon about it, with the greatest rapidity and with much certainty, to a surprisingly high point in the pelvis. I don't think you can open those phlegmons from above without running far greater risk than by the vagina.

If, however, the abscess is intra-peritoneal, I think that the choice of operation should depend largely on the condition of the patient, that is, upon the probable virulence of the pus. In the class of cases in which the patient is extremely ill and it is reasonable to expect that the pus will be acutely poisonous, I believe it is far safer to open from the vagina. I have seen many such cases, in which the trouble was an encysted peritonitis, return to a condition of satisfactory health without further operation. But if this does not occur, or if the abscess is tubal, I believe that the combined danger of the vagina drainage and of a secondary abdominal operation, is far less than that incurred by opening an acutely septic abscess through the abdomen. If there is any doubt as to the diagnosis, I believe that it is best to make an exploratory abdominal incision, and then be guided by circumstances whether to persevere by this route or to turn to the vagina. If the patient is in good condition, and there is a reasonable prospect of performing a radical operation without any undue amount of risk, I believe that the abdominal route should be chosen primarily in all cases.

I wish, in closing, to emphasize the fact that the vaginal operation which I advocate for virulent cases is not what Dr. Conant calls the useless procedure of

puncture and drainage, but is the radically different process of a free opening and a thorough disinfection and packing of the abscess cavity.

DR. WARREN: I think every hospital surgeon will in his experience come across a certain number of cases which should be approached by the vagina. Those operations were more common before the abdominal method became as popular as it is at the present time. I think there is a certain number we should reserve for that kind of operation. I sympathize entirely with the feeling that with the advantages which we have got recently in abdominal surgery derived from the great improvements, an opportunity is given us to operate on the pelvis in a way practically impossible before. I think, therefore, with these great advantages the abdominal method is far superior to the pelvic method, which seems to me an unsurgical procedure. I presume with certain gynecologists it is more popular because it is their habit of working in that direction, but the surgeon feels he must have space, must see what he is working upon. I think, therefore, the other way is a more surgical procedure. Dr. Conant's statistics about the bacteriology interested me greatly, and I was interested to hear what he said about the question of drainage. I was told by an operator the other day that he never drained any of his cases of acute appendicitis. I am in the habit of draining all mine. I was told by another operator that he never used gauze, but still continued to use drainage-tubes. I was surprised at that, because I felt I had made a distinct advance when I gave up drainage-tubes and had taken up gauze, avoiding the formation of intestinal fistulae. I think in using drainage with gauze we must not rely upon its power to conduct off pus for any length of time. I believe in beginning to work over the wound the next day after an operation, or certainly within forty-eight hours, and to change and to renew the gauze, and to diminish gradually the amount of gauze; and in that way we are able to keep the wound as clean as at the end of the operation, and avoid the risk of distinct collections of pus in the deeper part of the abdominal wound.

#### VIRULENT SALPINGITIS.

DR. RICHARDSON: This is a specimen of one of the virulent forms of salpingitis—the left tube and the uterus, removed this morning. With reference to pelvic inflammations and abscess I have little to say, except that I concur in the views of Dr. Conant, who presents, I think, the most conservative, the wisest and best course with reference to the treatment of pelvic disease. I have rarely seen those unusual forms of pelvic abscess which start from other sources than inflamed Fallopian tubes. Perhaps the most important consideration in connection with pelvic inflammations is their bacteriology. The micro-organisms which influence them do not differ from those which influence other forms of peritonitis. Though we as yet know little, it seems to me, as to the etiology and the bacteriology of peritonitis, nevertheless certain facts seem to be definitely proved. Though many forms of bacteria doubtless do not grow under the ordinary methods of cultivation, and consequently we cannot say that some unrecognized form of germ-growth may not be present in these cases in which our cultures are sterile, yet it is a fact which I have repeatedly observed, that cases of peritonitis in which

the cultures, under our present methods, are sterile, are generally favorable and recover; cases of peritonitis in which cultures of virulent and well-known forms of micro-organisms rapidly develop, are almost always fatal. Doubtless many forms of organisms occur in salpingitis of which we know little if anything — organisms which will not grow by the ordinary methods of cultivation; nevertheless, in this form of peritonitis, as in the usual form, sterile cultures encourage the hope of recovery; virulent cultures, the expectation of death. The practical questions upon which the science of bacteriology has so important a bearing appear in this perhaps more than in any other form of abdominal inflammation, for the question of closure of the incision is the most important one in connection with the technique of the operation. It is of the greatest possible advantage in abdominal operations to close the incision to prevent hernia, and to prevent as far as possible the formation of adhesions. Yet this is an advantage which ought not to be gained at increased risk of death. I have advocated, therefore, the immediate examination of peritoneal fluids, and especially the fluids in cases of salpingitis, with reference to that very point of closing the abdomen. In many instances it will be found that the fluids of salpingitis, though in gross appearances virulent to the last degree, are practically harmless. Cover-slip preparations made on the spot will demonstrate in many cases the presence or the absence of the commoner pathogenic bacteria. In the absence of any microscopical demonstration of virulent organisms it seems to me that it would be safe to close the abdomen immediately.

With reference to the question of route, my preference is very strongly in favor of that route which permits one to see exactly what he is doing, to avoid the ureters, to avoid the bladder, to avoid the intestines, to control hemorrhage, to prevent as far as possible faulty adhesions. These are reasons in favor of the abdominal route. On the other hand, the suprapubic incision is much more likely to be followed by general peritoneal contamination. Abscesses which point in the vagina, which are separated by a short interval from the vagina, I should open from below; all other cases, it seems to me, I should approach from above. Dissections can be intelligently performed only by the abdominal route. I have never removed the tubes by the vaginal method. I have, however, performed vaginal hysterectomy many times. This operation has always seemed to me one of the most satisfactory in surgery. In selected cases — and this operation should be performed only in favorable cases — the mortality is small. There are certain disadvantages, it seems to me, connected with the vaginal route, even in selected cases — notably, the danger of cutting important viscera, and the danger of subsequent intestinal obstruction from faulty adhesions. When the vagina is roomy, when the uterus is movable, and when extensive dissections are not necessary, the vaginal route seems to me preferable.

**HIS MESSAGE.** — The long, gloomy, operating-room of the hospital is hushed and still; soft-voiced nurses move quickly about; a skilful attendant arranges the cruel-looking instruments. Before administering chloroform to the patient, prior to the amputation, the kindly doctor asks him if he has any message for his friends. "Naw!" he murmurs wearily; "jest tell 'em dat you saw me, an' dat I'm losin' flesh."

## AMERICAN LARYNGOLOGICAL ASSOCIATION.

EIGHTEENTH ANNUAL CONGRESS, PITTSBURGH, PA.,  
MAY 14-16, 1896.

THE President, DR. WILLIAM H. DALY, of Pittsburgh, delivered

### THE ANNUAL ADDRESS.

DR. J. E. BOYLAN, of Cincinnati, read a paper on the subject of

### SPINDLE-CELLED SARCOMA OF THE NASAL PASSAGE.

DR. SAMUEL JOHNSTON, of Baltimore, read a paper on

### TRACHEAL STENOSIS.

DR. F. I. KNIGHT, of Boston, read a paper on

### INTERMITTENT DYSPHONIA SPASTICA.

DR. THOMAS HUBBARD, of Toledo, O., read a paper entitled

### SOME REMARKS ON THE PRINCIPLES OF TREATMENT OF SIMPLE ACUTE LARYNGITIS AND BRONCHITIS.

### THE PROPYLAXIS OF NASAL CATARRH.

DR. CARL SEILER, of Philadelphia, called attention in this paper to this important subject. He believes that there is but one primary cause which produces this prevalent disease, and that any other cause is merely the expression of a predisposition called into action by the former. Anything which produces acute inflammation of the anterior and posterior nasal mucous membrane will lay the seed for pathological changes in that very tissue, causing chronic infiltration and the deposit of connective tissue.

The earliest causes of nasal catarrh in childhood are, primarily, over-clothing, over-feeding, and consequent over-heating of the body. There seems a curious apathy on the part of parents, and the family practitioner as well, in regard to this condition in allowing one attack after another of acute coryza to develop a chronic catarrhal condition. It is therefore the duty of medical advisers to instruct parents in the method of applying those preventive measures which may be readily instituted. When an acute coryza has developed, the accumulation, inspissation, and putrefaction of the mucus should be at once prevented. The same care should be given to the nasal mucous membrane that is now given to the teeth, and a normal condition of that tissue would be the rule rather than the exception.

A child should be taught as soon as possible to snuff up a warm saline solution into the nose. The solution may be snuffed up either from the hollow of the hand or from a small cup or glass three or four times a day. A douche or atomizer should not be substituted for this method of artificial application for nasal cleansing. The simpler method is preferable because of its readier application and because of the child's natural abhorrence to the use of any instrument. Moreover, the douche and the atomizer do not accomplish their purpose any more successfully than does the simpler methods, and the extra pressure which is brought to bear on the mucous membrane by such appliances can readily produce more harm than good. Antiseptics may be added to the solution at the discretion of the physician, in order to prevent putrefaction and inoculation with the septic material. As important, however, in the treatment of such a case is the proper feeding

and clothing of the child, so that the general system may not be over-heated. The skin of the neck and arms, moreover, should be so hardened by cold water applications in the form of sponging night and morning that moderate exposure will not readily give rise to acute coryza. The author believes that American children in particular are, as a rule, too much clothed, too much confined indoors, and are overfed with heat-producing food. Too often when these children leave the nursery they are mere hot-house plants, and it takes a long course of out-of-door sports to enure them to exposure.

These seeds sown in the nursery frequently develop later into life; so that it is not an uncommon observation for college youths who lead an active athletic life during their academic course, to be attacked with phthisis when they settle down to the business of life, the tuberculosis having been kept in abeyance only by the out-of-door exercises which they enjoyed at college.

DR. JOHN O. ROE, of Rochester, N. Y., read a paper on

#### ETIOLOGY OF DEVIATION OF THE NASAL SEPTUM.

DR. ARTHUR W. WATSON, of Philadelphia, read a paper on

#### THE OPERATION FOR DEVIATION OF THE NASAL SEPTUM.

Dr. Watson believes that of the many operations which have been devised for the relief of this condition, none have as yet proved entirely satisfactory, because the fact is lost sight of that a deviated septum is longer than a straight one, and no provision is made for the reduction of the amount of tissue. The first step, therefore, in the operation should be to reduce the septum to a size that will fit into a straight line between the points of attachment of that portion of the nose. This can be accomplished by removing a portion of tissue in the general line of deviation. If the deviation is horizontal, an elliptical piece should be removed by incisions gradually convergent at either end. If the line of deviation is vertical a triangular or wedge-shaped piece should be cut out, the apex being upward and extending as high as possible, and the base reaching to near the base of the septum, where it may be joined by a horizontal incision. Where both forms of deviation are met with in the same case, both forms of incision should be used. The excised portion should always include the protruding angle, and the amount of tissue to be removed can be estimated by the eye. It is important to avoid cutting the mucous membrane on the side opposite the incision, as the membrane helps to hold the edges in line, and thus facilitates union and prevents perforation. The incision should be made on the convex side of the septum. To bring the body portion into line the crushing forceps may be used to advantage, either Adams's or Dr. Roe's.

The second part of the operation and the part which is most frequently neglected is the retaining of the septum in position. The author believes that one reason for failure in this operation is that the retaining force is not kept long enough. From three to four weeks should be allowed for the healing of the cartilage. The best support for the cartilage septum is a steel pin with a flat ring head, the ring being covered by a piece of rubber tubing. The pin should be inserted from the concave side of the septum, just

back of its anterior edge, and passed diagonally through to the other side; then across the vertical incision, if there is one; and then back into the septum, until the head lies on the septum within the nostril. Care should be taken not to produce a deflection in the opposite direction. This method leaves both nostrils free for respiration and cleansing. By padding the head of the pin, as described, no ulceration takes place, and it may be worn for three or four weeks without discomfort.

Should the deviated bony septum require additional support, a piece of iodoform gauze, folded to the desired thickness, may be placed between the septum and outer wall at the point of deviation. As the bony portion unites more quickly than the cartilaginous, the latter may be dispensed with in a week or ten days, leaving the pin to do the rest. In order to perform this operation properly, cocaine anesthesia should be used in preference to ether.

DR. E. F. INGALS, of Chicago, agreed with Dr. Roe that nutritive changes were the cause of nearly all cases of deflection of the septum, but did not believe that blows on the nose were responsible for but very few of these deflections.

DR. W. J. ASCH, of New York, agreed with Dr. Ingals as to traumatism being a rare cause for deflected septum, but did not agree with Dr. Watson that no operation had been devised for curing deflections, as he (the operator) had described one before this Association in 1889 which has been performed over one hundred times with almost uniform success. Dr. Asch described this operation by the aid of diagrams and demonstration of the instruments employed.

DR. S. O. VANDER POEL, of New York, agreed with Drs. Watson and Asch concerning the pin operation, and stated that in some twenty cases in which he had used it the pressure symptoms were so great that the patients could not wear the pin long enough to be of any service. As to Dr. Asch's operation, the speaker had used it twice with good results, and had seen it successfully employed in a number of cases.

DR. CARL SEILER considered Dr. Asch's operation nothing more than a revised, modified and elaborated *résumé* of one originally introduced before this Association by Dr. Glasgow. Referring to the pin operation, Dr. Seiler said he considered it the most successful method of producing a splint for fractured septum without producing necroses.

DRS. NICHOLS, DELAVAN, CASSELBERRY, MACKENZIE, SIMPSON, and others spoke in favor of Dr. Asch's operation. The general opinion was that traumatism was a rare cause of deflection of the septum, and among other causes assigned was heredity, an excellent example of this being given by Dr. Casselberry.

DR. BLISS, of Philadelphia, mentioned briefly an operation devised by Harrison Allen which had been employed very successfully.

DR. WATSON, in closing, said he considered his method the only one that could give good results in many cases.

DR. W. P. PORCHER, of Charleston, described

#### THE TREATMENT OF ATROPHIC RHINITIS, WITH A CASE.

The author went into some detail concerning the case to which he referred his treatment, and stated

(3) There are several disturbances commonly classified under "catarrhal laryngitis" which seem to bear little or no relation to a previously existing nasal or pharyngeal disease.

DRS. M. R. BROWN, H. L. SWAIN, A. W. DE ROALDES and DR. NICHOLS each gave examples of singers whose vocal bands were red normally.

DR. W. K. SIMPSON thought singing perpetually was never intended for the human larynx.

DR. S. H. CHAPMAN, read by title a paper on  
THE TREATMENT OF THE EARLY STAGE OF DIPHTHERIA.

DR. H. S. BIRKETT, of Montreal, described a case of

PERICHONDritis OF THE LEFT CRICO-ARYTENOID JOINT, FROM AN UNUSUAL CAUSE.

The patient referred to was a young man who contracted gonorrhea, and who was attacked by inflammatory rheumatism in the left knee, ankle and shoulder-joint during the course of this trouble. Pressure over the affected joint outside was very painful. The treatment consisted in constant applications of Leiter ice-coil, which afforded the patient a great deal of relief. The condition was regarded as one of acute rheumatic affection occurring in the course of an ordinary gonorrheal rheumatism.

DR. A. W. DE ROALDES reported a case of  
INCOMPLETE FRACTURE OF THE LEFT CORNU OF THE THYROID CARTILAGE, RESULTING FROM SELF-INFLICTED VIOLENCE.

The author gave the particulars of a very interesting case illustrating the title of his paper, the symptoms of which did not entirely disappear, even after operation, until many months had elapsed.

DR. C. H. KNIGHT, of New York, treated of  
THE SEQUELÆ OF SYPHILIS OF THE NOSE.

In the author's opinion the diagnosis of this affection is often very obscure. He strongly advocates conservatism in dealing with the sequestra frequently found, unless they are quite detached and accessible. Several cases were referred to more or less in detail, and the Martin platinum-bridge operation, with its modifications, was described. This method is believed to be an excellent one with certain precautions. Great care must be taken in the construction and shaping of the platinum bridge to avoid friction and pressure, and the dissection of the soft parts must be so wide as to obviate tension after the bridge has been put in place. In conclusion, reference was made to the use of a simple plate of platinum slipped under the skin of the dorsum of the nose, the dissection in preparing a bed for the metal having been carried on through the nostril.

DR. J. E. H. NICHOLS, of New York, read a paper on  
THE SEQUELÆ OF SYPHILIS OF THE PHARYNX, AND THEIR TREATMENT.

DR. W. K. SIMPSON, of New York, read a paper on  
THE SEQUELÆ OF SYPHILIS OF THE LARYNX, AND THEIR TREATMENT.

These papers were excellent, and contained much good material as well as many good suggestions.

DR. ROE mentioned one or two excellent methods

of repairing noses that were more or less deformed by syphilitic lesions, as did DRS. NICHOLS, DE ROALDES, INGALS, PORCHER and others.

DR. A. COOLIDGE, JR., of Boston, read a paper on  
THE CONTROL OF HEMORRHAGE IN SOME OPERATIONS ON THE NOSE AND THROAT.

Dr. Coolidge went into considerable detail as to the preparation of the patient and the method of operating, and considered that compression offered the best means of controlling bleeding when the vessel could not be found. He recommended plugging of the anterior nares for controlling hemorrhage from the nasal cavities, and the filling of the cavity with gauze to stop hemorrhage from the nasal pharynx. In controlling hemorrhage after removing the tonsils, he suggested the use of the cold wire, or if the patient is under an anesthetic, of a hot wire with the help of cocaine.

DR. A. W. DE ROALDES described a remarkable case of

FIBRO-CHONDROMA OF BRANCHIAL ORIGIN, OR SO-CALLED SUPERNUMERARY EAR, REMOVED FROM THE THROAT OF AN INFANT SIX WEEKS OLD.

The case reported by the author is unique, and only one of a similar nature is on record in this country.

DR. H. L. SWAIN, of New Haven, offered an essay on

ACUTE DISEASES OF THE LINGUAL TONSIL.

Dr. Swain said that if one were to judge by the amount of literature on this subject, it neither attracted nor deserved much attention; but, if he (the author) judged by his own experience, he should say that the subject had been, and still is, sadly neglected. He was convinced that acute lingual tonsillitis was often the cause of symptoms which were referred to other parts of the throat, simply because the latter were more easily seen.

In discussing the treatment, he remarked that in no acute throat troubles were there so evident and prompt effects produced by proper local treatment as in this. Of course repetition was necessary, but one uniformly had some reward for his labors. Anything which would reduce the swelling and inflammation was to the point. Glycerite of boro-glyceride applied to the parts and followed by a powder containing tannin and a small amount of morphia sulphate seemed to give as much relief as anything, to be assisted by frequent hot demulcent gargles. Systemic remedies were indicated in the same way as in other forms of tonsillitis.

The paper concluded with a short history of a case of abscess of the lingual tonsil, which had slowly developed upon an attack of faucial tonsillitis. It had been ushered in by a short attack of edema of the glottis. The abscess had formed close to the ary-epiglottic fold, and broke well back toward the arytenoid cartilage.

DR. THOS. HUBBARD, of Toledo, read some remarks on the

TREATMENT OF ACUTE LARYNGITIS AND BRONCHITIS.

Attention was called to the essential features of the middle respiratory tract. Hyperemia of the bronchial membrane, with more or less swelling, produced a condensation of the cellular elements, since the same number of epithelial cells occupy smaller area in proportion as the calibre of the tube is lessened. Inflamma-

tion of the throat and bronchi is often progressive. The larynx may be in a state of resolution and the bronchi in the first acute stage, and *vice versa*. The primary indication is to establish a free flow of mucus; and apomorphia in doses of one-thirtieth of a grain, repeated every two to four hours, is the best relaxing expectorant.

The same author reported a case of

**SQUAMOUS EPITHELIOMA OF VELUM PALATI CURED BY INJECTION OF CAUSTIC POTASH.**

Dr. Hubbard briefly mentioned the details of the case, one of the important features being the well-established cocaine habit of the patient. After treatment by the injections of caustic potash the patient gained rapidly in general health, and his weight increased forty pounds in two months. The cocaine habit was cured previous to commencing this treatment. It is now two years since the first injection, and there are no signs of return.

Dr. A. A. Bliss, of Philadelphia, reported two cases of

**SARCOMA OF THE NASAL CHAMBERS AND ACCESSORY SINUSES.**

During the Congress the following papers were read by title: "Some Thoughts about the Prophylaxis of Nasal Catarrh," by Carl Seiler, M.D., Philadelphia; "A Case of Myxedema of the Throat," by J. W. Farlow, M.D., Boston; "Tracheal Stenosis," by Samuel Johnston, M.D., Baltimore; "The Treatment of the Early Stage of Diphtheria," by S. H. Chapman, M.D., New Haven; "Erysipelas of the Air-Passages," by Wm. Porter, M.D., St. Louis; "Some Observations on Laryngeal Tuberculosis," by S. O. Vander Poel, New York; "Reflex Epilepsy from Lymphoid Disease of the Pharyngeal Vault," by U. G. Hitchcock, M.D., New York.

At the executive session the following were admitted to active fellowship: Dr. G. V. Woolen, Indianapolis; Dr. Emil Mayer, New York; Dr. Ward, Pittsburgh; Dr. T. Melville Hardy, Chicago; Dr. W. F. Chappell, New York.

The election of officers for the ensuing year resulted as follows: President, Dr. C. H. Knight, New York; First Vice-President, Dr. T. Morris Murray, Washington; Second Vice-President, Dr. D. N. Rankin, Allegheny; Secretary and Treasurer, Dr. H. L. Swain, New Haven; Librarian, Dr. J. H. Bryan, Washington.

The next Congress will be held at Washington in connection with the triennial meeting of the Association of American Physicians.

**SIR JOHN ERICHSEN'S WILL.**—Sir John Erichsen left an estate of the value of £88,619. He bequeaths to University College his surgical instruments and appliances, and to University College Hospital £2,000 for the rebuilding fund exclusively; to Mr. Christopher Heath and Mr. William Meredith, the copyright of "The Science and Art of Surgery," but excluding the profits of the tenth edition thereof; to the Royal College of Surgeons, his bust in marble by Thornycroft; to the British Museum, his gold Fothergillian medal, presented to him by the Royal Humane Society.

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**FINAL REPORT OF THE ROYAL COMMISSION ON VACCINATION.**

AFTER seven years (the Commission having been appointed in May, 1889) this Commission has issued its final report (London, 1896), which, with the preceding five reports containing the minutes of evidence and other material, will make a volume of more than 1,400 pages. The preceding preliminary reports have already been reviewed in the JOURNAL at the time of their issue.

This final report takes up the history of vaccination from the beginning, and restates the general belief in its efficacy which prevailed in the early years after its introduction.

The history of small-pox mortality in the period 1800-1825 is reviewed, and the great reduction in such mortality is conclusively shown.

The next period, 1826 to the present time, is noticeable for the legislation which was enacted. The argument that the decline in small-pox mortality is largely due to more systematic attempts to isolate the victims of small-pox, is met by the fact that such isolation is of recent date, and as yet very imperfect in character.

The change in the age-incidence of small-pox is conclusively shown by tables to be one of the most convincing arguments of the power of vaccination.

The serious epidemics which have occurred at Gloucester and at Leicester during the sessions of the Commission afford further evidence on this point, and show that in these towns, where the child population had been ill-vaccinated for many years, the proportion of deaths borne by children was very large, while in the other towns the proportional amount of child-mortality from small-pox varied with the relative deficiency of child vaccination. These phenomena are accounted for on the supposition that vaccination has the protective influence alleged. Can they be explained on any other supposition? is inquired in the

report. It is argued that improved sanitary conditions would tend to diminish the mortality amongst children. But if this were the explanation, similar changes of age-incidence ought to be seen in the mortality from all other diseases; this, however, is not the case. The proportion of the total mortality from measles, whooping-cough, and scarlet fever respectively borne by children has remained almost uniform, the variations being very trifling. So also with typhoid fever, the report shows that "there has certainly been no change in its age-incidence, which can be said to correspond with the change in the age-incidence of small-pox."

The Commission sums up this point as follows:

"If improved sanitation were the cause of the diminished mortality amongst children, in proportion to that borne by those of older years, it is quite impossible to understand how its effects should have varied so greatly in these different towns (in London, 36.8 per cent., but in Gloucester and Leicester, 64.5 and 71.4 per cent. respectively), and why in Gloucester and Leicester the mortality from small-pox should have been so largely among children, approaching in that respect the experience of the epoch preceding vaccination."

With reference to the comparative fatality of the vaccinated and unvaccinated, the report states that in the six cities where epidemics had occurred in recent years (London, Sheffield, Warrington, Dewsbury, Leicester and Gloucester), out of 2,321 unvaccinated persons who were attacked, 35.4 per cent. died; while among the vaccinated, 8,744 in number, only 5.2 per cent. were fatal.

The Commission answers in a satisfactory manner, the many other objections to vaccination, and shows also that vaccination has a protective effect against small-pox in the following table:

Locality.	Attack rate under ten per 100 persons living at the same age.		Attack rate over ten per 100 persons living at the same age.	
	Vaccinated.	Not Vaccinated.	Vaccinated.	Not Vaccinated.
Sheffield. . . .	7.9	67.6	28.3	53.6
Warrington . .	4.4	54.5	29.9	57.6
Dewsbury . . .	10.2	50.8	27.7	53.4
Leicester . . .	2.5	35.3	22.2	47.6
Gloucester . .	8.8	46.3	32.2	50.0

The attack-rate in this table is shown to be very greatly in excess among the unvaccinated, especially among children under ten. The modifying effect of vaccination upon the type of the disease is quite as conclusively shown in the report. In view of the facts bearing on the fatality-type of disease and attack-rate, the report asks the following questions:

"How does it happen that when a division has, on the hypothesis (of the anti-vaccinators), been arbitrarily made into two classes, the condition which guided the discrimination not being such as to render the one less subject to attack than the other, it is nevertheless found that, with a singular uniformity, the rate of attack in the one class is much less than that witnessed in the other? But this is not all; we have to ask, further, how it happens that whether fatality, attack-rate, or type be regarded, the difference between the two classes is much more marked in the case of children under ten years of age, who

are nearer the period of vaccination, than it is in the case of persons of more advanced years? To these questions those who deny that there is any efficacy in vaccination have furnished no satisfactory answers. If, on the other hand, it be conceded that there is virtue in vaccination, and that it renders the vaccinated less liable to be attacked, or to suffer severely from, or to die of, the disease than the unvaccinated, the phenomena are all explained and the difference vanishes."

The second topic discussed in the report is that of "objections made to vaccination on the ground of injurious effects alleged to result therefrom." The employment of calf-lymph is advocated as a means of excluding the risk of imparting syphilis and leprosy, and the Commission further concludes upon this point as follows:

"A careful examination of the facts which have been brought under our notice has enabled us to arrive at the conclusion that, although some of the dangers said to attend vaccination are undoubtedly real and not inconsiderable in gross amount, yet when considered in relation to the extent of vaccination work done they are insignificant. There is reason further to believe that they are diminishing under the better precautions of the present day, and with the additions of the further precautions which experience suggests will do so still more in the future."

Third, as to the measures to be taken to prevent or lessen any ill-effects of vaccination, the Commission strongly recommends animal lymph and believes that "parents should not be required to submit their children to vaccination by means of any but calf-lymph, but this should not preclude the use of humanized lymph in case they so desire."

They further recommend the postponement of vaccination when erysipelas, scarlet-fever, measles or chicken-pox are prevalent in the neighborhood of the child's residence.

"The vaccine vesicles should not be opened except for some adequate reason."

"Tubes are recommended for preserving lymph instead of 'dry points.'"

No instrument should be used which has not been sterilized for the purpose; and the simpler the instrument, the better.

Inspection should be made at some time in the second week, instead of on the eighth day, and another inspection should be obligatory in the third week.

Fourth, "What means, other than vaccination, can be used for diminishing the prevalence of small-pox? and how far can such means be relied on in place of vaccination?" After summing up the history of notification, isolation, disinfection and other sanitary measures, and the experience of recent epidemics in Sheffield, Leicester and other English towns the Commission concludes that

"A complete system of notification of small-pox, accompanied by immediate hospital isolation of the persons attacked, together with a careful supervision, or, if possible, isolation for sixteen days of those who had been in immediate contact with them, could not but be of very high value in diminishing the prevalence of small-pox. It would be necessary, however, to bear constantly in mind as two conditions of success, first, that no considerable number of small-pox patients should ever be kept together in a hospital situated in a populous neighborhood; and, secondly, that the ambulance arrangement should be organized with scrupulous care. If these conditions are not fulfilled, the effect might be to neutralize or even do more than counteract the benefits otherwise flowing from a scheme of isolation."



Special reference is made to the immunity from small-pox enjoyed by Australia, and to the necessity for better regulations for preventing the spread of the disease by tramps and common lodging-houses.

Fifth, This final portion of the majority report relates chiefly to the proposed alterations of the laws which were published in the brief interim report of 1892, namely, that *repeated* penalties for violation of the law should not be enforced, and that persons imprisoned for such violation should not be treated as ordinary criminals. This majority report is signed by eleven members of the Commission, two of whom, Messrs. W. G. Hunter and Jonathan Hutchinson, believed in the enactment of more stringent measures, while Messrs. Collins and Picton dissent from the report, and give their reasons for so doing in the closing pages. An amusing comparison occurs in this portion of the report where the ratio of passengers killed in railways is compared with the fatal accidents from vaccination very much to the damage of the latter, the enormous saving of human life from death by small-pox by means of vaccination being either left out of sight, or flatly denied. This portion of the report also lays great stress on a subject which has little interest to American readers, namely, the risk of syphilitic infection, for the reason that the use of humanized lymph is in the United States almost entirely a thing of the past.

On the whole, a careful reading of the whole report will only serve to strengthen the professional reader in his belief in the genuine character of the protection from small-pox afforded by vaccination.

The report is intensely English, and the reader cannot help wishing that a more complete reference had been made to the experience of Germany, from 1874, the date of enactment of its vaccination laws, down to the present time; since there is nowhere in the history of the subject any general instance of so conclusive a nature.

#### KLEPTOMANIA.

IMPERATIVE conceptions so strong as to constitute uncontrollable impulses to commit what would otherwise be crime, have so long been recognized to be as conclusive indications of mental disease as certain convulsive attacks are of epilepsy, that no one thoroughly familiar with psychiatry would presume to deny the existence of kleptomania, pyromania, dipsomania, nymphomania and suicidal and homicidal monomania, although rare, as distinct forms of insanity.

It was an English Lord Chancellor who declared, not far from a quarter of a century ago, that insanity should be treated as a subject of moral inquiry and not as a disease; and an English judge, who was on the bench about the same time, when sentencing an insane man to death for murder, said that he was not sure whether it was not more necessary to hang an insane person than a sane person.

It is not strange then, perhaps, that the force of

precedent is so strong in England that an English court has recently sentenced a lady to prison for shop-lifting, in spite of the facts that the evidence was conclusive as to her being a kleptomaniac and that her irresponsibility was testified to by Dr. George H. Savage, of London, one of the most distinguished experts in insanity living, whose good judgment and integrity stand as high as his medical skill.

We expected from our esteemed contemporary the *Daily Advertiser* something better than its comments on this case, and especially its final intimation that "if the question were to be decided upon the unbought opinions of high medical authority—not according to that most venal and shameful of purchasable commodities, 'expert testimony'—it would probably be found that kleptomania is to the full as common a disease in the families of workingmen as in those of millionnaires."

If one person is unable to protect himself or his family from the injustice of the courts, is that any reason why another who can do so should fail to use his opportunities to the utmost? Our suggestion would be rather to find some means of protecting those people who are now sentenced for crimes of which they are innocent because of insanity which they have not the means to prove.

#### MEDICAL NOTES.

A CLERICAL DENTIST.—A Sunderland (England) vicar has extracted 25,000 teeth from his parishioners in the course of his pastorate.

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS.—The sixth annual meeting of this Association will be held in the Academy of Medicine, New York City, on Tuesday, November 17, 1896.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.—The Ninth Annual Meeting was held at the Nicholson House, Nashville, Tenn., on November 10, 11 and 12, 1896.

THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.—Although the tuition-fee has been increased to \$200 a year, and the standard of admission has been raised, there are more than 250 students in the first-year class during the present session.

ASSOCIATE PROFESSOR IN MEDICINE AT JOHNS HOPKINS.—W. S. Thayer, M.D., who for two years has been Associate in Medicine in Johns Hopkins University, has recently received the appointment of Associate Professor of Medicine in the same institution.

THE PATHOLOGICAL SOCIETY OF LONDON.—The Jubilee of the Pathological Society of London was celebrated on October 20th. The address of the President, Mr. H. T. Butlin, was an interesting review of the history of the Society, the objects of its founders, the influence of the Society on the progress of pathology, and the applications of pathology to

practice. Several of the original members of the Society are still members, among them being Sir William Jenner and Sir Richard Quain.

**THE YOUNGEST HUMAN OVUM.**—Professor Leopold exhibited at a recent meeting of the Naturforscherversammlung, at Frankfort-on-the-Main, an ovum the size of a lentil which was found in the interior of a uterus removed from a woman of thirty for cancer of the cervix. After careful inquiries it was concluded that the ovum had reached the eighth day after conception. Successful sections of the ovum were obtained; and a full report of this remarkable case, illustrated, will, it is said, be published.

**PARAFFIN WAX AS A CONDIMENT.**—At Birmingham, England, according to the *London Daily Telegraph*, three confectioners were fined for selling "chocolate chumps," which contained paraffin wax and other injurious ingredients, but no chocolate. The city analyst stated that paraffin wax was probably more indigestible than India-rubber or a paving-stone. It may be perhaps as indigestible as either of the substances mentioned, but is certainly easier to masticate.

**COUNTERCLAIM FOR PHYSICIAN'S SERVICES ALLOWED IN AN ACTION AGAINST HIM FOR MALPRACTICE.**—The Supreme Court of Iowa, in a recent case brought before it on appeal by the plaintiff from a judgment entered on a verdict in his favor in an action for damages against a physician and surgeon for alleged malpractice in reducing a fracture of the plaintiff's arm, laid down the rule that the fact that a physician was guilty of negligence in the treatment of his patient, resulting in damages to the latter, does not necessarily preclude him from recovering any compensation whatever for his services, the amount of his recovery, if anything, depending on the amount of damages suffered because of his negligence.

**RUSH MONUMENT COMMITTEE.**—Dr. George H. Rohé, of Sykesville, Md., Secretary, notifies us, under date of October 31, 1896, that the following subscriptions to the Rush Monument Fund have been received:

1896.			
April 17.	Dr. J. W. Hoff, Pomeroy, O. . . . .	\$5.00	
" 17.	Dr. T. J. Acker, Croton-on-Hudson, N. Y. . . . .	5.00	
" 30.	Peoria City Medical Society (through Dr. O. B. Will), Peoria, Ill. . . . .	25.00	
" 30.	Dr. D. W. Cathell, Baltimore, Md. . . . .	1.00	
" 30.	Dr. W. T. Cathell, Baltimore, Md. . . . .	1.00	
May 9.	Dr. J. P. Getter and others, Mifflin Co., Pa. . . . .	3.00	
" 21.	Dr. E. H. Bishop, Towson, Md. . . . .	1.00	
June 10.	Dr. C. B. Burr, Flint, Mich. . . . .	10.00	
" 29.	Dr. W. H. Hardin, Anderson O. H., S. C. . . . .	1.00	
" 29.	Herkimer Co. Medical Society (through Dr. G. Graves), Herkimer, N. Y. . . . .	25.00	
Sept. 30.	Dr. J. W. Grosvenor, Buffalo, N. Y. . . . .	1.00	
" 30.	Interest to date, . . . . .	81.00	
		159.00	
	Before reported, . . . . .	3,727.39	
		\$3,886.39	

**THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS**, at its ninth annual meeting, held at Richmond, Va., elected the following-named officers for the ensuing year: President, James F. W.

Ross, M.D., Toronto. Vice-Presidents, George Ben Johnston, M.D., Richmond, and John C. Sexton, M.D., Rushville, Ind. Secretary, William Warren Potter, M.D., Buffalo. Treasurer, Xavier O. Werder, M.D., Pittsburgh. Executive Council: Charles A. L. Reed, M.D., Cincinnati; Lewis S. McMurtry, M.D., Louisville; A. Vander Veer, M.D., Albany; J. Henry Carstens, M.D., Detroit, and William E. B. Davis, M.D., Birmingham. The next annual meeting was appointed to be held at the Cataract House, Niagara Falls, N. Y., Tuesday, Wednesday, Thursday and Friday, August 17, 18, 19 and 20, 1897.

**LONGEVITY AND SLEEPING BY COMPASS.**—"A Magdeburg physician," according to the *Lyon Médical*, who died recently at the age of one hundred and nine, attributed his remarkable longevity to his constant practice of sleeping with his head to the north and his feet to the south. He considered this position most favorable to the magnetic currents which run constantly toward the north pole, and increase the energy of the vital principle. Correspondents of Dr. Felix Bremond, of the *Petit Marseillais*, have recorded results at variance with these views. One of them found that he slept better with his head to the east instead of to the north. The other found that a kind of nervous irritation to which he was subject ceased when he placed the head of his bed a little east of north. This position of the head of the bed brought him more sound and peaceful slumber, and with such regularity that when he wished to rise earlier than usual in the morning, all he had to do was to change the direction of the head of his bed, when his sleep became lighter and of shorter duration. Dr. Bremond himself, however, found that the direction of his body made no difference to the soundness of his slumbers, provided he went to sleep in a comfortable bed, at the usual hour and at the end of a day of active work, a conclusion with which it is probable most hard-worked physicians will agree.

**CREMATION AND THE LIVERY STABLE.**—A story has appeared in the lay press to the effect that on the death of a prominent resident of a certain New England town, the director of the funeral went to the livery-stable keeper and ordered one carriage for that function. "One?" said the stable man. "Yes, one," was the reply. "You don't mean it?" "Certainly; he's to be cremated." The man drew in his breath in a long whistle. "Gosh! Electric cars and bicycles, and now, cremation!"

#### BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—For the week ending at noon, November 4, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 125, scarlet fever 25, measles 78, typhoid fever 63. For the week ending November 11th, the following were reported: diphtheria 104, scarlet fever 17, measles 11, typhoid fever 14.

**LOWELL INSTITUTE LECTURES.**—Dr. D. G. Brinton, of Philadelphia, is delivering the lectures in the current Lowell Institute Course, on the "Religions of Savage Races."

**THE MASSACHUSETTS ASSOCIATION OF BOARDS OF HEALTH.**—The quarterly meeting of this Association was held recently at the Parker House. Legal questions connected with the enactment of health regulations, and measures for the restriction of the spread of measles, were the questions for discussion. Dr. H. P. Walcott presided at the dinner served at the beginning, and Dr. Samuel H. Durgin conducted the business session.

**THE PAN-AMERICAN MEDICAL CONGRESS.**—Dr. Irving A. Watson, of Concord, N. H., Secretary of the American Public Health Association, has gone to the Pan-American Medical Congress as a delegate from the New Hampshire Medical Society.

#### NEW YORK.

**A NEW BUILDING FOR THE GERMAN POLIKLINIK.**—A reception was held at the German Poliklinik, No. 78 Seventh Street, on November 5th, to celebrate the opening of the new building next door, at No. 80. It is four stories high, of brick, and has about the same accommodations as the old building. The Poliklinik was organized in 1883, and during the last year 18,618 patients were treated there; the average daily attendance being 197. Dr. C. A. Von Ramdohr is the Secretary.

**IMPROVEMENTS AT BELLEVUE AND BLACKWELL'S ISLAND HOSPITALS.**—The Board of Estimate and Apportionment has approved plans for the construction of two pavilions, for erysipelas and contagious cases, and for a new boiler and laundry building at Bellevue Hospital, at a cost of \$180,000, and also for a new kitchen and two towers at City (Charity) Hospital on Blackwell's Island, at a cost of \$72,500.

**ROOF GARDENS ALONG THE RIVER.**—An important measure for the health and recreation of the poor in summer has been inaugurated in the contemplated construction of public roof gardens over several of the large piers along the river front. At a special meeting of the Dock Board held November 2d, the plans for such a roof garden above the pier at the foot of East Third Street were approved. It will be three hundred feet long, by fifty feet wide, with an arched roof, while the sides will be left open. The roof garden will be plentifully supplied with chairs and benches and in the centre there will be a band-stand.

**DEATH OF DR. LANGAN.**—Dr. John T. Langan, one of the most prominent physicians in the north-western part of the State of New York, died at his home at Oswego, at the age of thirty-nine years.

**THE MOUNTAINSIDE HOSPITAL.**—The sixth annual meeting of the Mountainside Hospital Association was held at Montclair, New Jersey, on November 6th. The treasurer's report showed that during the past year many gifts had been received, including

one of \$10,000 in memory of the late Dr. John W. Pinkham, part of which has been used for the building of an isolating ward for contagious diseases. Several gifts of land have also been made, and one donor contributed ice to the value of over \$600. Three nurses who had completed their course of training in the hospital received diplomas from Dr. J. J. H. Love, President of the Medical Board, and Dr. E. C. Spitzka, of New York, delivered an address on "Popular Errors Regarding Mental Diseases."

**A LOW MORTALITY-RATE.**—During the autumn the death-rate in the city has continued exceptionally low, and in the week ending November 7th the smallest mortality yet recorded was reached. During this week the number of deaths was 618, against 629 the week previous. The number of deaths from scarlet fever declined from 7 to 1, those from typhoid fever, from 6 to 4, and those from consumption, from 95 to 87; and the deaths from diphtheria increased from 20 to 26, and those from pneumonia, from 76 to 88; while those from measles and whooping-cough were the same in each week, namely, 2 and 3 respectively.

#### Miscellany.

#### COMING MEETING OF THE PAN-AMERICAN MEDICAL CONGRESS.

The regular correspondent of the *Boston Herald* writes from the City of Mexico as follows:

The medical world here is expectantly awaiting the assembling here, November 16th, of the Pan-American Medical Congress, at which will be present some six hundred physicians and their wives, representing every country in the new world, from Chili and the Argentine up to Canada, and also from Cuba and Hayti. The United States contingent will number three hundred. It is the intention of the city and federal authorities to give the doctors and their women folk a splendid reception, and display to them the proverbial hospitality of Mexico.

Among the United States delegates are State government representatives, and doctors specially commissioned by American scientific societies. This will be the second Pan-American Medical Congress, the first having assembled in Washington in 1893 at the invitation of the United States government. The Congress will be divided into sections, ten of which will meet in the historic School of Mines, which was founded by wealthy Spaniards in the times of the viceroys, for the improvement of technical education, and which, on the occasion of General Grant's visit to Mexico, was fitted up for his accommodation in truly regal style. The Bacteriological Section will meet in the College of Medicine, in the ancient edifice once the home of the holy inquisition, while the Section of Military Surgery and Transportation will hold its sessions in the military hospital.

The inaugural session will take place in the National Theatre, an edifice of the size of the Boston Theatre, on the night of the 16th, when President Diaz will make a speech of welcome, and Dr. William Pepper of the University of Pennsylvania will also address the Congress and the invited guests.

On the night of the 18th, the city government will give a grand reception in the halls of the ancient, but splendid Ayuntamiento building on the grand plaza, in which a monster orchestra, composed of all the military bands of the garrison, will play American and Mexican airs, while a

magnificent display of fireworks will be given in honor of the all-America doctors.

On the 19th, the physicians and their families will be tendered a reception at the Castle of Chapultepec by President and Mrs. Diaz, *la presidenta*, as the wife of the chief magistrate is called. It will be a memorable occasion, for the scene in the hanging gardens of Chapultepec's great castle on a festal occasion is always brilliant, and the views superb, embracing all the noble expanse of the valley of Mexico. In the evening, it is planned to give the doctors and their fair friends a reception in the famous "porcelain house" of the aristocratic Jockey Club. Excursions to all points of interest in the city and suburbs are being planned, and a special commission of Mexican ladies of the highest society, presided over by Mme. Eliza Lynch de Camacho, wife of the distinguished capitalist and president of the city council, Don Sebastian Camacho, will look after the comfort and entertainment of the physicians' fair relatives and wives. Mme. Camacho is one of the great leaders of Mexican society, dispensing an elegant hospitality in her luxurious mansion in front of the Church of San Fernando, and her executive talents fit her admirably for doing the honors of Mexico's fair ones to the visiting ladies from foreign lands.

The Mexican doctors, a most liberal-minded body of men, some of whom hold American diplomas in addition to their own, a class without petty prejudices, cultivated and enlightened, are looking forward with great pleasure to this notable event in Mexican medical history, and they will give the heartiest sort of welcome to their brother doctors from all over the new world.

## LIQUOR AND POLITICS IN NEW YORK CITY.

THE superintendent of Bellevue Hospital, New York City, reports, according to the *New York Sun*, that there have been fewer persons under treatment for drunkenness in that institution than in any previous political campaign. This confirms, according to the *Sun*, the observation that the late political campaign has been singularly free from drunkenness, the arrests for intoxication have been few, and the cases of intoxication much rarer than in previous campaigns.

The causes for this improvement in the campaign conditions is attributed to several facts, the first being that, under the present ballot law, the nominations have to be filed a month in advance, giving each candidate plenty of time to push his nomination without resorting to the methods of the "bar-room canvass," which included the treating of all comers, and was necessary when there were only eight or ten days between the nomination and the election.

The present liquor tax has also diminished the influence of the liquor dealers in politics. The present penal code has also put an end to ante-election balls and entertainments, which formerly tended to provoke turbulence and disorder.

According to the *Sun*, local politics, if not taken more seriously, are at least taken more temperately and judiciously, and the man who insists upon treating all electors whom he may happen to meet, as a proof of his good-will, and to stimulate their good-will to him, is no longer regarded as formidable in either political party, or, indeed, in any political organization.

It is a curious fact, in the old bar-room canvasses the politicians who profited most from them were usually temperate men themselves, or even total abstainers from the use of tobacco or malt liquors in any form. They kept their own heads while they were upsetting other people's.

## METEOROLOGICAL RECORD

For the week ending October 31st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.		
S...25	30.04	42	49	36	49	54	52	N.W.	W.	17	9	C.	C.
M...26	30.17	44	56	33	47	68	58	S.W.	S.W.	5	12	F.	C.
T...27	30.22	54	66	43	69	40	50	W.	N.W.	11	5	C.	C.
W...28	30.47	48	52	44	77	72	74	N.	S.E.	5	8	F.	C.
T...29	30.23	52	61	43	78	80	79	S.	S.W.	8	4	O.	O.
F...30	30.03	64	73	55	87	84	86	S.W.	S.W.	4	12	F.	O.
S...31	29.84	68	76	60	86	56	71	S.W.	W.	13	6	F.	C.
Mean	30.14		62	46			67						.05

\* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 31, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	629	187	9.60	15.20	2.56	.96	4.16	
Chicago	1,678,967	436	145	21.85	5.98	6.90	5.29	7.36	
Philadelphia	1,164,000	362	114	12.60	12.34	3.08	.56	7.64	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	494,205	188	62	16.96	10.97	1.06	4.77	8.41	
Baltimore	496,315	160	54	11.97	10.08	3.15	.63	3.15	
Cincinnati	336,000	90	23	8.88	11.11	2.22	2.22	4.44	
Cleveland	314,587	94	50	16.02	1.06	—	—	15.90	
Washington	275,500	101	20	8.91	22.77	4.95	.99	.99	
Pittsburg	238,617	82	33	18.30	6.10	3.66	2.44	10.98	
Milwaukee	275,000	—	—	—	—	—	—	—	
Nashville	87,764	30	6	10.00	20.00	—	—	6.66	
Charleston	65,165	27	3	7.40	25.90	3.70	3.70	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	98,687	33	10	18.18	6.06	3.03	3.03	9.09	
Fall River	88,020	29	17	13.80	—	3.45	—	—	
Lowell	84,359	39	16	17.92	12.60	5.12	2.66	7.68	
Cambridge	81,519	24	6	12.45	8.50	—	8.30	—	
Lynn	62,355	17	1	11.76	17.64	—	5.88	5.88	
New Bedford	55,254	12	5	33.33	—	25.00	8.33	—	
Springfield	51,534	15	6	13.33	6.66	13.33	—	—	
Lawrence	52,153	18	7	—	5.55	—	—	—	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	12	4	25.00	8.33	—	—	25.00	
Brookton	33,157	—	—	—	—	—	—	—	
Haverhill	30,185	10	3	20.00	10.00	—	—	20.00	
Malden	29,709	5	0	—	60.00	—	—	—	
Chelsea	31,295	11	3	—	18.18	—	—	—	
Fitchburg	26,394	7	1	—	14.28	—	—	—	
Newton	27,122	4	1	—	—	—	—	—	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	8	2	—	12.50	—	—	—	
Waltham	20,877	6	0	—	—	—	—	—	
Quincy	20,712	3	1	—	—	—	—	—	
Pittsfield	20,447	4	0	—	—	—	—	—	
Everett	18,578	—	—	—	—	—	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,564	3	0	—	—	—	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 2,563: under five years of age 814; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 354, acute lung diseases 326, consumption 292, diphtheria and croup 162, diarrheal diseases 86, typhoid fever 54, whooping-cough 21, scarlet fever 11, measles 10, cerebro-spinal meningitis 5, erysipelas 2.

From whooping-cough Chicago 6, New York and Baltimore 3 each, Philadelphia 2, Boston, Cleveland, Washington, Providence, Nashville, Fall River and Cambridge 1 each. From scarlet fever New York 7, Boston 2, Philadelphia, Pittsburg, Providence, Fall River and Somerville 1 each. From cerebro-spinal meningitis Philadelphia, Baltimore, Washington, Worcester and Lowell 1 each. From erysipelas Chicago and Baltimore 1 each. In the thirty-three greater towns of England and Wales, with

an estimated population of 10,846,971, for the week ending October 24th, the death-rate was 17.6. Deaths reported, 3,655: acute diseases of the respiratory organs (London) 334, diphtheria 89, diarrhea 67, scarlet fever 56, measles 50, fever 47, whooping-cough 40.

The death-rates ranged from 11.5 in Croydon to 23.4 in Preston: Birmingham 19.2, Bolton 20.8, Bradford 16.0, Cardiff 14.1, Gateshead 16.4, Hull 21.2, Leeds 15.0, Leicester 15.0, Liverpool 21.8, London 17.1, Manchester 19.4, Newcastle-on-Tyne 14.0, Nottingham 17.0, Portsmouth 15.8, Sheffield 19.1.

#### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 7, 1896.

J. L. NEILSON, medical inspector, detached from the "Maine," November 10th, and placed on waiting orders.

L. C. HENEBERGER, surgeon, ordered to the "Maine," November 10th.

D. N. CARPENTER and F. L. PLEADWELL, appointed assistant surgeons from October 24th.

G. P. LUMSDEN, surgeon, detached from the "Yorktown," ordered home and granted three months' leave.

J. E. PAGE, passed assistant surgeon, detached from the "Boston" and ordered to the "Yorktown."

G. ROTHGANGER, passed assistant surgeon, detached from the "Oregon" and ordered to the "Patterson."

R. M. KENNEDY, passed assistant surgeon, detached from the "Patterson," ordered home and granted three months' leave.

R. S. BLAKEMAN, assistant surgeon, detached from the "Vermont," November 12th, and ordered to the "Boston," per steamer of November 21st.

W. M. WHEELER, assistant surgeon, detached from the "Franklin," November 12th, and ordered to the Naval Hospital, Mare Island.

A. FARENHOLT, assistant surgeon, detached from the Mare Island Naval Hospital and ordered to the "Oregon."

S. B. PALMER, assistant surgeon, detached from the Naval Laboratory, New York, and ordered to the "Vermont."

D. N. CARPENTER and F. L. PLEADWELL, assistant surgeons, ordered to the Naval Laboratory and Department of Instruction, New York.

#### OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICES FOR THE SIXTEEN DAYS ENDING OCTOBER 31, 1896.

PUEVIANCE, GEORGE, surgeon. Placed on waiting orders from November 5, 1896. October 27, 1896.

SAWTELLE, H. W., surgeon. Detailed to represent Service at Pan-American Medical Congress to be held in City of Mexico. October 23, 1896.

WHEELER, W. A., surgeon. Granted leave of absence for three days. October 16, 1896.

PECKHAM, C. T., passed assistant surgeon. Directed to proceed from Port Townsend, Wash., to Detroit, Mich., for duty. October 27, 1896.

GLENNAN, A. H., passed assistant surgeon. Granted leave of absence for nine days from December 23, 1896.

PETTUS, W. J., passed assistant surgeon. To assume temporary command of Service at Norfolk, Va., in addition to his other duties. October 24, 1896.

MAGRUDER, G. M., passed assistant surgeon. Detailed as inspector of immigrants at Galveston, Tex. October 24, 1896.

WERTENBAKER, C. P., passed assistant surgeon. To proceed from Delaware Breakwater Quarantine to Philadelphia, Pa., for temporary duty. October 16, 1896.

YOUNG, G. B., passed assistant surgeon. Leave of absence extended five days. October 16, 1896.

NYDEGGER, J. A., passed assistant surgeon. To proceed from South Atlantic to Brunswick, Ga., Quarantine for temporary duty for thirty days. October 26, 1896.

NORMAN, SEATON, assistant surgeon. Granted leave of absence for five days. October 22, 1896.

PROCHAZKA, EMIL, assistant surgeon. To proceed from Cairo, Ill., to Delaware Breakwater Quarantine for temporary duty. October 16, 1896.

CUMMING, H. S., assistant surgeon. Relieved from duty at Evansville, Ind., and directed to rejoin station on expiration of present leave, at New York, N. Y. October 22, 1896.

#### RESIGNATION.

HAMILTON, J. B., surgeon. Resignation accepted, to take effect November 13, 1896. October 16, 1896.

#### ANNIVERSARY MEETING OF THE AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIETY.

The twentieth anniversary of the publication of the *Journal of Inebriety*, and the twenty-sixth year of the Association for the Study and Cure of Inebriety, will be celebrated by a memorial meeting at the New York Academy of Medicine, Friday evening, November 20, 1896. A cordial invitation to be present is extended to all medical men.

The following addresses and papers will be presented:

"An Historical Review of the First Meeting of the Association, and Its Papers and Discussions." By Lewis D. Mason, M.D., Brooklyn, N. Y.

"The *Journal of Inebriety*, its Organization and Growth, the Early and Later Literature." By T. D. Crothers, M.D., Hartford, Conn.

"The First Asylum for the Care of Inebriates and its Founder." By Charles H. Shepard, M.D., Brooklyn, N. Y.

"The First State Asylum for Pauper Inebriates, and its Work." By M. E. Hutchinson, M.D., Foxboro, Mass.

"The First Efforts to Treat Opium Cases in Asylums." By J. B. Mattison, M.D., Brooklyn, N. Y.

"The First Home for the Transient Care of Inebriates." By V. A. Ellsworth, M.D., Boston, Mass.

"Empiric and Charlatan Efforts to Cure Inebriates for the Past Quarter of a Century." By N. Roe Bradner, M.D., Philadelphia, Pa.

"The History and Influence of Alcohol in Medicine in Modern Times." By I. N. Quimby, M.D., Jersey City, N. J.

"The Origin and Growth of Asylums for Inebriates in Great Britain." By Norman Kerr, M.D., London, Eng.

#### HARVARD MEDICAL SCHOOL.

##### EVENING LECTURES.

The next lecture will be given on November 19th, at 8 p. m., by ASST.-PROF. F. B. MALLORY. Subject: "Facts and Theories in Regard to Staining." The profession are invited.

#### SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, November 16th, at 8 p. m.

Dr. E. M. Hartwell will present a paper entitled: "Physical Training, its Function and Place in Education." The following gentlemen have been asked to take part in the discussion: Drs. H. P. Bowditch, Cowles, Channing, Conant, Bradford and Goldthwait.

JAMES G. MUMFORD, M.D., Secretary, 197 Beacon St.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place on Wednesday evening, November 18, 1896, at 8 o'clock.

From 8 to 8 30, Remarks by the Chairman, and short communications by Drs. R. C. Cabot, Stone and Wentworth.

At 8 30, Dr. Henry Jackson will read a paper on "Heat Stroke." In opening the discussion Dr. Locke will speak on "The Normal Regulation of Heat," and Dr. Wright on "The Pathological Anatomy of Heat Stroke."

At the meeting on December 16th, Dr. H. F. Vickery will read on "Hemophilia." W. F. WHITNEY, M.D., Chairman.

#### RECENT DEATHS.

WILLIAM COOKE HOLYOKE, M.D., M.M.S.S., died in Boston, November 6th, aged fifty-four years.

MORIS SCHIFF, M.D., professor of physiology in the University of Geneva, died October 6th, aged seventy-three years.

JULES EUGENE ROCHARD, M.D., formerly Inspector-General of the Health Department of the French Navy, died September 13th, aged seventy-seven years. He was president of the French Academy of Medicine in 1894, and had been president of the Society of Public Medicine and of the French Association for the Advancement of Science.

#### BOOKS AND PAMPHLETS RECEIVED.

Practical Points Regarding Albuminuria. By David Inglis, M.D., Detroit.

Education and Patho-Social Studies. Washington: Government Printing Office. 1896.

Pitting about the Hair-Cups. By William Browning, Ph.B., M.D., Brooklyn, N. Y. Reprint. 1896.

The Want of College Instruction in Electro-Therapeutics. By Robert Newman, M.D., New York. Reprint. 1896.

The Status of the Medical Expert Witness in California. By G. L. Simmons, M.D., Sacramento, Cal. Reprint. 1896.

## Original Articles.

THE RESULTS OF OPERATIONS FOR THE CURE OF CANCER OF THE BREAST.<sup>1</sup>

BY J. COLLINS WARREN, M.D., LL.D.,  
Professor of Surgery in Harvard University.

(Concluded from No. 20, p. 485.)

**CASE XVIII.** This patient was a single woman of only twenty-two years. There was no history suggesting heredity or cause. Eight years ago she noticed enlarged glands above the clavicle; and the present growth was first seen three months ago, with coincident glandular enlargement in the axilla. She was operated upon January 25, 1889, at which time the tumor was the size of a small apple, very hard, and the gland in the axilla was the size of a walnut. The breast and pectoral fascia were removed, and the axilla was very thoroughly cleaned out. The diagnosis was cancer. November 4, 1889, a nodule was excised from the scar. She died in two years with recurrence of the disease.

**CASE XIX.** This patient was fifty-two years old and married. There was nothing in her family or personal history of interest. Her present illness dates back ten months, and at the time of operation, February 9, 1889, the tumor formed a hard nodulated mass, the size of a small orange. The skin was not adherent, and in the axilla some enlarged glands could vaguely be felt. The breast was removed and the axilla carefully cleaned. The tumor from the breast was cancer, but no report was received concerning the axillary glands. She was examined by me in June, 1895, and no sign of recurrence found.

**CASE XX.** This case was operated upon February 19, 1889. The patient was married, forty-one years old, and her family and past personal history presented nothing characteristic. The disease of the breast was of one year's duration and appeared as disseminated disease with infected glands extending from the axilla up to the clavicle. The breast was excised, with the axillary glands, and the disease found to be medullary cancer. This was a case of *cancer en cuirasse*, and the patient died of generalized cancer on September 26, 1890.

**CASE XXI.** This patient was forty-five years of age, and was operated upon April 8, 1889. She was married. There was nothing of note in her family or past history. The tumor which had existed for three months appeared as a nodule about as large as a small egg in the periphery of the breast. Enlarged glands could be felt in the axilla. The breast was amputated and the axillary contents removed, the growth proving to be a medullary cancer. Local recurrence appeared in the following autumn, and the patient died in July, 1890, with generalized cancer.

**CASE XXII.** Married, forty-five years old, with no family history to suggest heredity, and no assignable cause for the disease, which had existed for only two months. On August 7, 1889, the date of operation, she had a lump as big as an English walnut in the upper hemisphere of the breast, and the axillary glands apparently were unaffected. The usual excision of the breast, with dissection of the axilla, was performed, and the growth found to be scirrhus can-

cer. There was local return in three months, and she died November 22d of the same year.

**CASE XXIII.** Operated on November 1, 1889. The patient was fifty-eight years of age and married. Her family history was negative. She had had eight children, and twenty-eight years ago had mastitis. The present trouble appeared three years ago, and at the time of operation showed retraction of the nipple, with the skin adherent. The growth had been slow until the past two months, since which time the tumor had enlarged quite rapidly to the size of an orange, and had become ulcerated. The breast was removed, and the axilla carefully cleaned of its glands, many of which were adherent to the vessels. The tumor was a cancer. In May, 1890, a recurrent growth was removed; in October, 1890, there was inoperable recurrence; and she died in May, 1891.

**CASE XXIV.** This patient was fifty-nine years old, married, and the mother of three children. Her family history was negative. Four years ago she injured the breast now the seat of disease. Two years after the injury she noticed a lump in the breast, which at the time of operation formed a tumor as large as a lemon. The breast was flattened, the skin puckered, and the nipple retracted. Enlarged glands were to be felt in the axilla. On November 4, 1889, the breast and a number of enlarged glands were removed. No pathological diagnosis was made. She was well on January 1, 1891; but later a small lump appeared in the cicatrix without palpable enlargement of the axillary contents. She died May, 1895, with fungating recurrence in the axilla.

**CASE XXV.** Operation on December 27, 1889. The patient was forty-seven years old, married, and had had six children. Her family history was negative and she had no idea as to the cause of her malady, which appeared nine months ago as a small lump. In the past month growth has been rapid and attended with pain. At the time of operation there was a nodular mass as large as a small orange in the breast, the skin was adherent, and the nipple retracted. The axillary glands were palpably enlarged. The breast was removed, together with the pectoral fascia, and the axilla apparently fully cleaned out. The growth was cancer, and nine months later appeared in the other breast. She was treated for six months by an irregular practitioner, had recurrence in the scar, and died in May, 1893, of cancer of the stomach.

**CASE XXVI.** This case was operated on January 2, 1890. The patient was married, forty years of age, and fourteen months before operation noticed a lump as large as a hen's egg in the left breast. An aunt died of cancer of the breast, but otherwise her history was negative. The breast contained a mass as large as an orange, hard, nodular, and movable. The skin was adherent and the nipple retracted. A hard cord extended to the axilla. The breast was removed, with part of the greater pectoral muscle. Glands, the size of peas, were dissected from the axillary vessels and from beneath the clavicle. The diagnosis was cancer. May 15, 1892, there had been no recurrence, but in the autumn of that year a recurrent nodule was "drawn" by an irregular practitioner. In April, 1893, she sustained a fracture of the hip. Later there was recurrence in both breasts, neck and abdomen. She died in August, 1893.

**CASE XXVII.** This patient was thirty-five years of age, married, and with no important family or per-

<sup>1</sup> Read before the Boston Society for Medical Improvement, May 4, 1896.

sonal history. Her trouble appeared about six months ago without known cause, and at the time of operation existed as a hard lump in the breast, the size of a lemon. The nipple was not retracted, and enlarged glands could be felt in the axilla. January 16, 1890, the breast, with the pectoralis major—which was involved—was removed. A number of enlarged glands were removed from the axilla, which then appeared clean. The growth was cancer. She died February 1, 1891, having had no local recurrence.

**CASE XXVIII.** This patient had a retracting growth of nine months' duration. She was fifty-four years of age, married, and her family and personal history were unimportant. Operation was performed on March 5, 1890, at which time she had an extremely fatty breast, with a small retracting nodule in the centre. Numerous small glands were felt in the axilla. The breast and axillary contents were removed, and the tumor found to be a scirrhus cancer. This patient suffered from local recurrence, and died in October, 1890.

**CASE XXIX.** Operation on November 9, 1891. The disease had appeared three months before, without assignable cause, and had grown rapidly just before operation. The patient was fifty years old, married; her family history was negative. At the time of operation the breast contained a nodular tumor as large as a goose-egg, with adherent skin, retracted nipple, and numerous enlarged glands in the axilla. The pectoral muscle was involved, and was removed with the breast. Glands were removed from the axilla. No pathological diagnosis was made. The patient died in May, 1892.

**CASE XXX.** In this case there was no cause known for the appearance of the disease, which had existed for four months. The patient was married, about fifty years of age, and with a negative family history. There was a cancerous infiltration of the breast, with numerous small glands in the axilla. The usual completed operation was performed in February, 1892, and the breast and axillary contents removed. The diagnosis was medullary cancer; and she died October 14, 1892.

**CASE XXXI.** This patient was married, sixty-six years old, and had lost a sister from cancer of the breast. She sustained a blow some time ago upon the breast now diseased, and four months ago noticed the growth. She was operated upon in October, 1892, and at that time there was a lump the size of an orange in the upper hemisphere of the breast. The breast was removed with the axillary contents, the tumor proving to be a medullary cancer. In June, 1893, recurrence was first noticed; and on May 22, 1894, she died of generalized cancer.

**CASE XXXII.** Operated November 4, 1892. The patient was fifty years old, married, with a negative family history, and without any theory as to the cause of her complaint. There has always been a hardness near the nipple, and five months ago she noticed a lump, the size of a pigeon's egg, which has grown rapidly. At the time of operation there was a hard nodular mass, the size of an apple, in the upper inner quadrant of the breast. The skin and pectoralis muscle were adherent, and the axillary glands were enlarged. The breast and both pectorals were removed, the axillary vein exposed and well dissected, and the axilla cleaned out. Microscopic examination showed the disease to be cancer. There was local recurrence in June, 1893; and the patient died in June, 1894.

**CASE XXXIII.** A woman, sixty years old, married. Operated upon November 7, 1892. Her family history was negative, and there was no cause shown for the appearance of the disease, which began as a small lump thirteen months before, and had grown rapidly. She had a hard tumor as large as a hen's egg, movable on the muscle, the skin slightly adherent, and the nipple normal. No glands could be felt in the axilla. The breast and both pectorals were removed, and the axilla thoroughly cleaned of a chain of glands, not adherent to the vessels, but running up high in the axilla. The tumor was a cancer. In April, 1896, her son writes that there has been no recurrence of the growth.

**CASE XXXIV.** A single woman of forty-five years, with a good family history, and knowing no cause for the disease, which appeared five months before the date of the operation. She presented a tumor in the outer hemisphere, with enlargement of the axillary glands. On January 1, 1893, the breast and both pectorals were removed and the axilla dissected. The tumor was a medullary cancer. She developed a recurrence on the outer side of the chest; and on November 26, 1894, Dr. Bolles removed several small nodules of cancer. She was last heard from in January, 1896, up to which time there had been no further recurrence, and she considered herself well.

**CASE XXXV.** This patient was operated upon January 18, 1893, for scirrhus cancer of one year's duration. Her family and personal histories were unimportant. She had a tumor as large as an apple, with retracted nipple, ulcerated skin, and enlarged axillary glands. The breast was thoroughly removed and also both pectorals, and the axilla cleaned out. She was last heard from on January 7, 1895, when she had recurrence in the scar, and a nodule in the liver.

**CASE XXXVI.** A married woman of thirty-five, with a negative family history, was operated upon February 21, 1893. No cause was assigned for the tumor, which had appeared five years before. The tumor was as big as a goose-egg, not adherent to the skin, and the nipple was not retracted. A few glands could be felt in the axilla, but none above the clavicle. The breast and two infected glands high up in the axilla were removed, the pectorals not being touched. The disease was cancer. In May, 1895, she writes as follows: "No trouble except stiffness, which is growing monthly less." On February 28, 1896, reports herself well.

**CASE XXXVII.** In this case the family history was bad, the patient's mother having died of cancer of the breast. The patient was fifty years of age, married, and had first noticed the disease only four weeks before operation. No cause was assigned for the occurrence of the malady. At the time of operation, April 18, 1893, she had a small nodule in the inner upper quadrant of the breast with a second, very small nodule under the nipple. One minute gland could be felt in the axilla. The breast was removed and the axilla dissected, the disease proving to be scirrhus cancer. She was heard from in April, 1896, and had had no recurrence.

**CASE XXXVIII.** Operation on June 8, 1893. The patient was married, forty-two years old, and there was nothing in her family or past history to suggest a cause for the disease. At the time of operation the tumor had existed for a year in the right



breast, and for six weeks in the left, the latter being the smaller. Both breasts were removed, and the axillæ dissected, the disease in both being scirrhus cancer. Recurrence developed below and external to the right cicatrix; and she died in March, 1894, with lung metastases.

CASE XXXIX. This patient was fifty-one years old, married, with a bad family history, and a medullary cancer which had developed in five months from a chronic mammary tumor. The skin was involved in the outer lower quadrant of the breast. On June 12, 1893, the breast was removed and the axilla dissected. The tumor proved to be a medullary cancer; and she died in March, 1894, with local recurrence and lung metastases.

CASE XL. This patient was a married woman of sixty, with a good family history. Two years before the appearance of the trouble for which she consulted me she sustained a dislocation of her shoulder and fracture of the ribs. Two years ago the disease showed itself, and at the time of operation there was a nodule in the skin involving the upper outer quadrant of the breast, with some involvement of the axillary glands. The breast was removed and the axilla dissected on September 11, 1893. The disease was a scirrhus cancer, and when last heard from the patient was in excellent health, without recurrence. This was in October, 1896.

CASE XLI. The disease in this case had existed for three months in a woman of fifty, with a negative family history, and no known cause for its appearance. The tumor was in the lower outer quadrant of the breast, and small glands were felt in the axilla. On January 1, 1893, the breast, with the pectoralis major, was removed and the axilla dissected. The growth was a disseminated medullary cancer. The disease recurred in the region of the original tumor six months later; and in May, 1895, she was still living, with recurrence in the supra-clavicular region. She died June 9, 1895.

CASE XLII. The father, sister, and three cousins of this patient died of cancer. The patient was a married woman of fifty-three. She had noticed retraction of the nipple for two years, and a tumor for three months. She was operated upon January 20, 1894, the tumor being then as large as a walnut, with no glands palpably enlarged in the axilla. The breast was removed in the usual manner, and the axilla thoroughly dissected. The pathological diagnosis was scirrhus cancer. This patient writes, under date of March 6, 1896, "Have no further symptoms of cancer."

CASE XLIII. In this case the family history was negative, and there was no cause assigned for the occurrence of the disease. The patient was sixty-five years old, and single. At the time of operation the tumor had existed for eighteen months, and presented in the upper outer quadrant of the breast a nodule the size of a walnut with involvement of the areola of the nipple, and enlargement of the axillary glands. On January 30, 1894, the breast was removed, and the axilla dissected. The growth was scirrhus cancer. The wound never healed; and on July 20, 1894, the patient died.

CASE XLIV. This patient was unmarried, fifty-two years of age, and her family and past history were negative. The disease in her case was of three months' duration, in the upper half of the breast, with enlargement of the axillary glands. On February 3,

1894, the breast, both pectoral muscles, and the axillary contents were removed. The tumor was a medullary cancer, and up to October, 1896, when she was last heard from, there had been no recurrence.

CASE XLV. This case was operated upon February 8, 1894. The patient was single, fifty-seven years of age, and her family history was negative. She ascribed her trouble to a sprain due to reaching upward. The disease had existed for five months as a nodule beginning in the skin and subsequently involving the outer upper quadrant of the breast with enlargement of the axillary glands. The breast and axillary contents were removed, and the tumor found to be scirrhus cancer. She died in August, 1895, of spinal cancer.

CASE XLVI. The patient was seventy-two years old, married, and without any significant family or personal history. She had a tumor in the lower outer quadrant of the breast of six months' duration, with involvement of the skin, and enlarged glands in the inner margin of the axilla. On February 14, 1894, the breast, a portion of the pectoralis major, and the enlarged axillary glands were removed *en masse*. The microscope showed the disease to be medullary cancer; she died on the 9th of the following June with generalized cancer.

CASE XLVII. This patient was operated upon on February 17, 1894. She was thirty-eight years of age, married, and without assignable cause for her trouble, or significant family history. Her disease was of seven months' duration, and had grown rapidly during the past two months. At the time of operation there was a nodule in the right breast, the size of a walnut, situated in the outer upper quadrant; the skin was slightly reddened and adherent, the breast enlarged and firmer than on the left, and with numerous enlarged glands in the axilla. The breast was removed, with the pectoral fascia, and the axilla was dissected. The disease was medullary cancer, with extensive axillary infection. There was recurrence one month later, and she died in about two months with involvement of the lungs.

CASE XLVIII. This patient had noticed her trouble for nine months, and gave a history of a blow upon the breast one year before. Her mother had cancer. She was fifty-six years of age, and single. At the time of operation there was a nodule in the upper hemisphere of the breast, and the axillary glands were affected. On July 20, 1894, the breast was removed, with both pectoral muscles, and the axilla was dissected. The disease was medullary cancer; and when last heard from, in October, 1896, there had been no recurrence.

CASE XLIX. This patient was forty years of age, married, and without family or personal history of any significance. Seventeen months ago she noticed a lump, the size of a filbert, in the right breast. At the time of operation, October 3, 1894, the tumor was as large as a hen's egg, and the axillary glands were enlarged. The breast and both pectorals were removed, the axilla dissected, the clavicle divided, and the supra-clavicular glands removed. The breast and axillary contents showed epithelial growth in dense fibrous stroma. The supra-clavicular glands were not affected. In January, 1896, a nodule in the margin of the axilla, and one in the pectoral cicatrix were removed under cocaine anesthesia. The patient died on March 26, 1896.

**CASE L.** This patient was operated on November 3, 1894, for a growth of six months' standing. She was forty years old and married. Her family history was negative, and no cause was assigned for the appearance of the disease. She had a tumor as large as a walnut in the inner lower quadrant of the breast; and the breast, with the axillary contents, was removed. The diagnosis was medullary cancer. August 23, 1895, a malignant nodule, the size of a pea, was removed from the pectoral margin of the axilla; and in October, 1896, a nodule had formed in rib.

**CASE LI.** This patient had an abscess of her breast twenty-three years before operation, and one year ago noticed a black spot in the scar. She was fifty-six years old, married, and had lost a sister by cancer of the breast. At the time of operation, December 15, 1894, there was a mass an inch square beneath the scar of the former abscess, and the nipple was involved. The breast and both pectoral muscles were removed, and the clavicle divided, no glands being found above it. The diagnosis was scirrhus cancer. When last seen, May 18, 1895, her general health was good, although a "sore" had opened twice and healed.

**CASE LII.** This patient was forty-five years old, married, and with no significant facts in her family or personal history. At the time of operation the disease, which had existed for five months, appeared as a nodule beneath the nipple. There was a small gland in the axilla, which proved, however, to be not affected. On January 22, 1895, the breast and both pectoral muscles were removed, and the axilla dissected. The growth proved to be a scirrhus cancer in a chronic mastitis, with retention cyst. She was last seen by me in January, 1896, and had had no recurrence.

**CASE LIII.** This case was operated on the same day as the preceding one, January 22, 1895. The patient was fifty-six years of age, married; and no family or personal history suggested malignant disease. Her nipple had been retracted for six years, but she had noticed a tumor for only three months. This, at the time of operation, formed a mass the size of a pigeon's egg above and to the outside of the breast, and there was one gland as big as a pea in the axilla. The breast and both pectoral muscles were removed, the axilla dissected, and the clavicle divided. The disease was cancer; and up to April, 1896, when she was last heard from, there had been no recurrence. The movements of the arm were normal.

**CASE LIV.** This patient was forty-five years of age, married, and with a negative family history. Six years before the time of operation she fell from a horse, striking the affected side, and had noticed the present trouble for three years. There was a nodule beneath the nipple, with a few small glands in the axilla. On March 28, 1895, the breast and both pectoral muscles were removed, and the axilla dissected. The tumor was a scirrhus cancer, and when last examined by me, May 14, 1896, there had been no recurrence. Movements of the arm normal; pulling power a little weaker than before the operation. Well, October, 1896.

**CASE LV.** Operation on April 3, 1895. The patient was forty-four years old, married, and with a negative family and personal history. Her disease had existed for six months, but had grown chiefly in the last six weeks. At the time of operation there

was a mass, the size of a Messina orange, in the outer upper quadrant of the breast. The breast and both pectoral muscles were removed, and the axillary and supra-clavicular spaces cleaned of glands. The disease was medullary cancer. She had recurrence in the pectoral cicatrix, which was excised February 21, 1896, at which time two nodules were found in the skin and subcutaneous tissue. At the present moment, October, 1896, return in pectoral scar.

**CASE LVI.** This patient was fifty years old, single, and had lost her mother by cancer. No cause was known for the occurrence of her own trouble, which had existed for only six weeks, and presented at the time of operation a nodule the size of a cherry in the upper inner quadrant of the breast. The lymphatic vessels and axillary glands were infiltrated with cancer. On August 24, 1895, the breast was removed, with a greater part of the pectoralis muscle. The axilla was dissected and the supra-clavicular space explored. The pathological diagnosis was medullary cancer. In June, 1896, sternal and mediastinal gland removed. Well, September, 1896.

**CASE LVII.** This patient was forty-nine years of age, married, and with a negative family history. No cause was assigned for the appearance of the disease, which at the time of operation existed as a nodule, the size of a large pea, in the breast, with a few enlarged glands in the axilla, those at the apex being normal. On September 24, 1895, the breast and pectoralis major were removed and the pectoralis minor dissected. The disease was scirrhus cancer, and up to November, 1896, there had been no recurrence.

**CASE LVIII.** This case was operated upon October 19, 1895. The patient was married, sixty-six years of age, and without significant family or personal history. She had noticed the present trouble for three years, and at the time of operation there was a small hard mass in the upper hemisphere of the breast; the nipple was deeply retracted; the breast shrunken; and a small enlarged gland could be felt in the axilla. The pectoralis major was removed, the pectoralis minor divided, and the breast with the axillary contents removed *en masse*. The tumor proved to be an atrophying scirrhus cancer. She was examined by me, April 10, 1896; no recurrence.

**CASE LIX.** Operation on November 25, 1895. The family history was negative. She ascribed her disease to pregnancy. The growth had existed for twelve weeks, a nodule forming one week after confinement, and appeared as a soft, fluctuating tumor in the upper outer quadrant of the breast, with hyperemia of the mammary and axillary regions, accompanied by high fever and frequent chills. The breast, axillary contents and pectoral muscles were removed *en masse*. The growth was medullary cancer. There was immediate recurrence, removal of infected skin two weeks later, and death in January, 1896.

**CASE LX.** In this case the two great-grandfathers had cancer, and the patient had sustained an injury to her breast four years before the date of operation. The woman was fifty years old, married, and had noticed the growth for three and a half years. At the time of operation, December 27, 1895, there was a tumor as large as an egg in the upper outer quadrant of the breast, the nipple was retracted, and the glands in the axilla and above the clavicle were enlarged. The breast, both pectoral muscles, and the

axillary contents were removed in one mass, and the disease found to be medullary cancer. Well, November, 1896.

**CASE LXI.** This patient was single, thirty-eight years of age, and was operated upon January 3, 1896. The family history was negative, and no cause was assigned for the appearance of the disease, which had existed for one year. The tumor was in the upper outer quadrant of the breast, adherent to the skin and muscle, and the axillary glands were enlarged. At the operation the pectoral muscles, breast and axillary contents were removed in a mass, and the disease found to be medullary cancer, and rapidly returned.

**CASE LXII.** This patient was sixty-three years old, married, and her family history was negative. No cause was assigned for the disease, which had appeared seven months before operation. She was operated upon January 27, 1896, at which time there was a lump, the size of a lemon, in the upper outer quadrant of the breast, and no glands were to be felt in the axilla. The axillary contents, pectoralis major muscle and breast were removed in a mass, and the pectoralis minor muscle was divided. The disease was medullary cancer, but the axillary glands were not infected. Patient reported herself well, September 11, 1896.

#### TETANY, WITH A REPORT OF CASES.<sup>1</sup>

BY HOWARD A. LOTHROP, A.M., M.D.

THE occurrence of tetany in America is of sufficient rarity to warrant the recording of all cases; for, in consequence of the few examples which we have for observation, our literature is characterized by its paucity of reports on this subject. The following remarks are based on the study of three recently observed cases, on notes of cases seen in foreign hospitals, and on a review of the literature.

**CASE I** was that of a boy three years of age. He was an only child. His parents were living and in good health. His mother had nursed him for six months; but after that time his diet had consisted of cows' milk and condensed milk, together with one or other of the various prepared foods. Apparently, he had always been a well child, and I was unable to obtain a history of any definite sickness.

In April, 1895, I saw him for the first time. He had been sick for two days, and had cried incessantly during this period on account of pain which was referred to the hands and feet. At the onset of the disease he had vomited several times, and the previous constipation had been overcome by the administration of castor oil. There was no history of cough, of spasms of the glottis, or of general convulsions.

Inspection showed a well nourished boy of average size. His legs were drawn up, flexed at the hip and knee; the feet were in the position of talipes-equinovarus. The arms were held at the side, semi-flexed at the elbow-joints; the hands were firmly flexed at the wrist; the fingers slightly curved and approximated; and the thumb was drawn across the palm of the hand. Bilateral symmetry prevailed throughout as regards the position of the limbs.

The condition was one of tonic contracture; but no history of clonic movements was elicited, although the

<sup>1</sup> Read before the Boston Society for Medical Improvement, May 18, 1896.

parents stated that the contractions varied in degree from time to time, the pain varying accordingly. After intervals during which nothing abnormal was noticed about the arms or legs, attacks of spasm would be induced by the excitement attendant on moving the child about, or incurring his displeasure and producing crying spells. These attacks would last for at least twenty minutes, and occasionally persist for an hour.

All flexor muscles distal to the elbows and knees were firmly contracted and tender, attempts at passive motion eliciting signs of great pain. Voluntary motion of the feet and hands was absent. The temperature was 100.5° F; the pulse 130; the respiration 28. Examination of the chest and abdomen showed nothing abnormal. There were no signs of rickets. The excited condition of the patient and the degree of pain from which he suffered, prevented a satisfactory examination of the nervous system. Warm baths and a bromide solution were ordered.

A visit was made on the following day during a period of muscular quiescence. The attacks had been less painful and less frequent during the night; the child had slept some and seemed brighter. On further examination it was difficult to draw satisfactory inferences in regard to the condition of the superficial and deep reflexes, owing to the age and muscular efforts of the child. Gentle percussion over the larger branches of the facial nerve brought out contractions of the corresponding muscles. Continued pressure over the ulnar nerve, just above the internal condyle, gave rise to the contraction characteristic of tetany, to be described later as Trousseau's phenomenon. This procedure was accompanied by the usual evidence of pain. The pupils were equal and reacted to light, and the muscles of the orbit were free. As nearly as could be determined there was no cutaneous sensory disturbance. No electrical tests were made.

This condition persisted without much change for a period of about eight days, at the end of which time the spasms were less frequent, and the child was less fretful. After the expiration of about two weeks, Trousseau's phenomenon was no longer to be obtained, and the spasms had already ceased. At the end of the third week, the only remaining symptom was due to the response of the facial nerve to mechanical irritation, known as Chvostek's phenomenon. Before the expiration of the fourth week, the child was as well as ever.

On inquiry at the time, I could find no other cases of this affection in the neighborhood. The hygienic surroundings were those of a thickly tenanted quarter near the water's edge, the family occupying the lower floor. The child has remained well up to the present time, and has suffered no further attack.

**CASE II** was that of a pregnant woman, thirty years of age, a Syrian by birth, resident in this country only a year. As far as could be ascertained her family history was good.

Of her past history I obtained the following account: In early childhood she had had measles and scarlet fever, but otherwise seems to have been perfectly well. As is characteristic of this race, she attained her development early, had her first catamenia at thirteen years, and was married at the age of eighteen years. In Syria she gave birth to four children. The periods of gestation were without particular incident, the labors easy, and convalescence rapid. During the last three months of the third

pregnancy, however, she suffered from severe diarrhea, but no signs of tetany were present. The children are all living and well. Except when interrupted by pregnancy, the catamenia have been normal in every respect.

She reached Boston in September, 1894, and was nursing an infant five months old. In the following December, she had an attack much like the present one, but far less severe, which lasted about two months. She did not consult a physician, and her symptoms gradually wore away. She was perfectly well during the following summer.

I saw her for the first time in December, 1895. For two weeks she had been suffering from recurrent attacks of pain in both hands and feet, accompanied by muscular contractions in these extremities, and she was much annoyed by the twitching of the muscles in the distribution of the facial nerve. A severe attack of these symptoms coming on with a period of very cold weather, led her to seek medical advice. She stated that she was about seven months pregnant, and had suffered no unusual inconvenience during the period of gestation up to the present time. On questioning her I found that at times she was free from pain, but that her suffering came on periodically, independent of the hour of day or night, and that it was accompanied by peculiar tonic contractions of certain groups of muscles in the extremities. From two to six of these attacks would occur during the day and night, the duration of these attacks varying from a few minutes to an hour or more. During most of the twenty-four hours she complained of various paresthesiæ in the feet and hands, and was always forewarned of the onset of the attacks of spasm by an increase of these subjective symptoms. There was a feeling of numbness and prickling, together with occasional twinges of sharp, shooting pain. There was no headache, but the onset of the attack was accompanied by weakness, nervousness and excitability, often awakening her from sleep. The facial muscles would begin to twitch and simultaneously the tonic contractions in the feet and hands would progress, thereby augmenting the pain to a considerable degree. At the height of the spasm, the patient was powerless to move either fingers or toes, and was utterly unable to walk. After a variable period of time, the spasm would gradually subside, with corresponding relief from pain, and she would feel comparatively well, although the fingers always felt a little stiff and the fibrillary contractions about the eyelids caused great annoyance.

There was no cough, no pain referable to the chest or abdomen; there had been no diarrhea, but much constipation. Her appetite was fairly good, and there was no nausea or vomiting. She was evidently not of a nervous temperament, as the further history of the case demonstrated. She had had no chill; her sleep at night had been frequently interrupted by the onset of the attacks.

**Physical Examination.**—The patient was of medium development, and fairly nourished. She directed my attention to the fibrillary twitchings about the face, and pointed to her hands and feet as the seat of her pain.

The chest was negative; the abdomen was made prominent in the lower half by a centrally located symmetrical tumor, which corresponded to a uterus seven months pregnant. None of her symptoms were referred to the chest or abdomen.

The face was flushed, and the forehead covered with perspiration. The fibrillary contractions of the facial muscles were particularly marked and constant about the orbits, and were very annoying. Very gentle percussion over the larger branches of the facial nerve on either side, provoked violent contractions in the corresponding muscles (Chvostek's phenomenon). In fact, the mouth could be thus distorted, or the eyes closed at the will of the examiner. The eyesight was normal; the pupils were equal and reacted both to light and accommodation; the ocular muscles were free. There were no auditory symptoms. The tongue, and the muscles of the fauces and larynx also were free.

The arms were held at the side and flexed at the elbow; the hands were in the position known as *main d'accoucheur*. There was flexion at the wrist and metacarpo-phalangeal articulations, while the two distal phalanges were extended. The thumb was drawn across the palm of the hand, which was made hollow by the over-prominence of the thenar and hypothenar eminences. Both hands were symmetrical, and the position was maintained by tonic muscular spasm. The flexor muscles of the forearm and the smaller muscles of the hand were very tender and painful, as a result of this forced muscular action. The position of the hand and fingers corresponded in general with that produced by stimulating the ulnar nerve. Pressure on the ulnar nerve above the internal condyle served to increase the pain and render the muscles more tense. Percussion with the hammer at this point showed marked sensory hyperæsthesia. Although to move the digits gave rise to great pain, voluntary motion was impossible, and her hands were useless during the spasm, which lasted from a few minutes to an hour or more.

The patient was sitting on the bed with her legs crossed and both feet in the position of extreme talipes-equino-varus. The muscles of the calves were rigid and tender, and passive motion of the foot was strenuously objected to on account of the pain produced thereby. The patient could not stand or walk. There was no tremor or incoördination, and the sphincters were intact. Trophic disturbances were absent.

Further details as regards the condition of the nervous system, obtained at the first or on subsequent visits, were as follows: The tendon reflexes were absent during an attack of spasm, and were normal in the interim; the cutaneous reflexes were inconstant at all times. Mechanical excitability of the seventh cranial nerve (Chvostek) remained very constant at all times, and attacks of spasm in hands and feet could be obtained at will by nerve pressure, as first described by Trousseau. Mechanical excitability of the sensory nerves was most marked during the attacks, and, at such time, very gentle pressure over the nerve trunks gave rise to pain and various paresthesiæ. The special sensations of pain, touch, and heat and cold were normal.

On applying the faradic current to motor and sensory nerves, the excitability was found somewhat increased. To the galvanic current, on the other hand, the excitability was very markedly increased. This electrical and mechanical hyperæsthesia of the sensory and motor nerves was always more marked just before, during, and for some time after the attacks. The order of electrical reaction to the positive and nega-

tive pole was normal, and there was no reaction of degeneration. Dipping the hands into cold water did not cause muscular contractions. At no time were the masseter or pterygoid muscles involved. The pulse and respiration continued normal, but the temperature was frequently a degree or two elevated after a particularly severe attack, generally accompanied by profuse perspiration. The urine was normal.

A detailed account of the progress of this case would be monotonous. The patient gave birth to a healthy child two months later. On but few occasions during this interval were the attacks so severe as at the time of my first visit. The number varied from one to six during the twenty-four hours, and at times several days would elapse without one. It was almost invariably the case to find her complaining of more or less stiffness of the fingers and hands. The Chvostek and Trousseau phenomena were always present as well as a varying degree of electrical hyperaesthesia. Toward the period of confinement, the attacks of spasm became less frequent. The patient remained indoors continually, and the nature or severity of the weather had no influence on her condition.

The labor was perfectly normal, and it affected the tetany in no way whatever. There were no further spasms, and the so-called latent symptoms subsided rapidly. During the period of gestation, the patient always wore a peculiarly anxious or worried expression. This disappeared at once after childbirth, and this sudden change in her appearance was frequently commented upon by her visitors. She nurses her child, and reports that she is absolutely well.

The treatment consisted in regulating the diet, the administration of tonics and sedatives, and the occasional use of some local application during the attacks. Nothing but morphia would control the pain. The case showed that drugs were not of much avail.

In brief, then, the salient points of this case are:

- (1) Recurrent attacks of tonic spasm of certain symmetrical groups of muscles in arms and legs, preceded and accompanied by certain sensory disturbances.
- (2) Increased mechanical excitability of the motor nerves, particularly the facial (Chvostek's phenomenon).
- (3) The possibility of inducing the spasm in the arms by nerve pressure (Trousseau's phenomenon).
- (4) Increased excitability of the nerves to electric currents, particularly the galvanic, as demonstrated by Erb and Hoffman.
- (5) Sudden cessation of these symptoms on termination of the pregnancy.

Given such a group of symptoms, we are justified in making a diagnosis of tetany.

CASE III. Since reporting the above cases, Dr. E. A. Crockett discovered the following example at the Eye and Ear Infirmary, and to him and Dr. J. W. Bartol I am indebted for this brief account.

The patient was a child, eighteen months old, suffering from an otitis media suppurativa, and visited the clinic but a single time. He had the appearance of a healthy child, but on examination revealed unmistakable signs of rachitis.

Inspection showed the hands and feet in the position characteristic of tetany, with corresponding subjective symptoms. The mother stated that these contractions had appeared at irregular intervals and with varying severity during the last few months. There

had been no laryngismus stridulus, or other symptoms of sufficient severity to lead her to consult a physician. Chvostek's phenomenon was present, but that of Trousseau could not be obtained on account of the muscular spasm. Circumstances prevented further examination, and the patient disappeared.

In the literature of this subject there exists a great deal of confusion, particularly in the earlier monographs, both as regards nomenclature and as to whether we should regard it a distinct disease, or should look upon it as merely a symptom of some underlying pathological process. The field of neurology is comparatively new, but our knowledge of the physiology and pathology of the nervous system has advanced rapidly within the last decade. As a result of scientific research, we have been able to differentiate diseases of the nervous system, either by the association of certain constant clinical symptoms, or by the discovery of pathological changes apparent to the naked eye, or revealed only after careful staining of sections and expert examination under the microscope. Certain of the so-called "neuroses," are described as distinct and well-recognized diseases, although the basis for such differentiation is solely clinical.

The term "tetany" has been given to a group of associated clinical symptoms, with no known pathological support for their existence. These manifestations occur under conditions far too diverse to be considered symptomatic of any other recognized disease, but they should rather be looked upon as being sufficiently constant to form a disorder by themselves. This group of symptoms, as enumerated above, certainly exists under very varied circumstances, whatever the cause, and all of the recognized authorities on neurology agree to classify it as one of the "neuroses."

Tetany is defined, therefore, as one of the "neuroses," and is characterized by peculiar tonic intermittent or continuous muscular contractions, generally confined to the extremities, but sometimes finally involving all the muscles of the body. In addition, however, there must be certain special symptoms, as demonstrated by Chvostek, Trousseau and Erb.

A brief consideration of this disorder may not be amiss. The earliest description was published in 1830 by Steinheim, followed by that of Dance one year later. In 1851, Corvisart made some important investigations in this connection; but the discoveries of Trousseau soon afterwards, were the most important made concerning tetany. Until 1872, the French had been foremost in studying this subject; but since then the most valuable work has been done by the Germans, for which we are indebted particularly to Erb, Hoffman, Chvostek and v. Frankl-Hochwart.

*Sex and Age.*—Of 200 cases, the sexes are nearly equally affected, but an analysis of these cases shows that before the age of twenty, boys are more frequently subject to it, while from twenty to fifty, women suffer twice as frequently as men. It may occur at any age, but 60 per cent. of the cases come on during the first twenty years of life.

*Occupation* does not seem to have much influence, although most of the cases occur among the poorer classes, particularly those who lead a sedentary life, as shoemakers and tailors. Its geographical distribution is of interest, in that most of the recorded cases were observed in Vienna, Prague and Paris, and it has been epidemic in these cities. In the neurological clinics at Vienna, seven-tenths per cent. of the cases

are recorded as tetany, and one-tenth per cent. in Berlin. The disease is rare in America, for, in 1894, Griffith was able to tabulate but 72 cases, obtained from all the literature, some of which are of doubtful nature; during the last year but few cases have been reported which can be added to the list.

**Etiology.**—We are absolutely in ignorance concerning the direct cause of tetany, although in nearly three-quarters of the cases, we are able to discover some predisposing condition. The wide range of these conditions, together with the not unusual epidemic character of this disorder, have led many authorities to believe in a specific cause. There is much to be said, however, in opposition to this theory.

These predisposing conditions have been classified by v. Frankl-Hochwart somewhat as follows:

(1) Idiopathic, meaning thereby, the onset of the symptoms of tetany without known predisposing conditions. Not rarely does it assume the form of an epidemic, as observed by v. Jaksch at Prague, and various instances of such outbreaks in schools, garrisons and prisons, are on record. Tetany is said to be always endemic in Vienna, Paris and Prague. The epidemic, as well as all varieties, is more common during the period from January to April, inclusive.

(2) Chronic gastro-intestinal disorders are often found to be the predisposing cause, more especially in cases of gastric dilatation in consequence of pyloric stricture. Extreme acidity of the gastric contents, the use of the stomach-tube, and vomiting are generally sufficient to provoke an attack of spasm. Most careful examination of the gastric contents of such patients has failed to demonstrate a cause for this neurosis. Chronic intestinal disorders may serve to provoke an attack.

(3) All acute infectious diseases, all septic processes, rickets, and exposure to cold and wet, may be followed by tetany. In childhood, rickets is by far the commonest accompaniment of the disease in question.

(4) Tetany has been known to follow the inhalation of chloroform, the use of alcohol and ergot, and may coexist with uricacidemia.

(5) The periods connected with pregnancy have been a comparatively fertile source of these cases. The onset is commonest during the period of lactation, next in frequency is the last half of the period of gestation, or the onset may be simultaneous with the labor, when the labor pains and tonic muscular spasms are generally synchronous.

(6) After total excision of the thyroid gland, tetany has been observed to appear. In a series of one hundred and twenty-three cases of total excision of the thyroid gland, reported by Billroth and Wölfler, there developed nineteen cases of tetany. Furthermore, there are numerous instances which show the close relationship between tetany, thyroid atrophy, and myxedema. F. v. Eiselsberg has succeeded in producing the disorder in animals by removing this gland, and finds that tetany does not supervene, provided one-fifth of the gland is left behind.

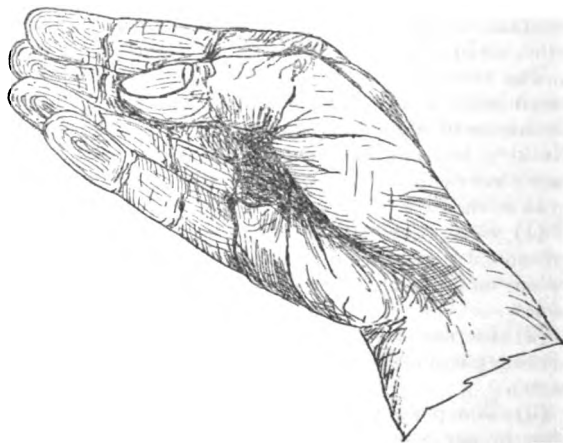
With this very diverse variety of predisposing causes, most authorities are led to believe that tetany owes its existence to some specific excitant, the nature of which is yet to be demonstrated. The occasional outbreaks of epidemics offer strong evidence of the probability of such a theory.

**Subjective Symptoms.**—As a rule, the first warning that the patient has of any impending trouble, is the

onset of the attacks of spasm, although he may have been suffering for a longer or shorter time from a latent form of tetany. Any cause, sufficient to interfere with the performance of the various functions of the economy, may serve to provoke the spasms. The commoner excitants are overexertion and exhaustion, emotion, sudden changes of temperature, an attack of vomiting or acute diarrhea.

Adults often learn to observe certain premonitory symptoms, such as a feeling of malaise, headache, depression and obscure general pains, although these are by no means constant. The attack itself is ushered in by certain sensory disturbances in the hands and feet, such as prickling and numbness, together with some pain. The spasm comes on slowly, increasing the sensation of pain as the muscles become more tonic. It is very rare to have symptoms attributable to the second or eighth cranial nerves. The sensorium generally remains free. The appearance of spasm is the first warning in children.

**Objective Symptoms.**—The contractions begin in the fingers and toes, and work toward the trunk, and may finally involve all the muscles of the body, according to the severity of the case. In the large majority, however, only the feet and hands are involved. The contraction is tonic, and may be continuous or intermittent; the number varies from one or two to fifty per diem, and the duration from a few minutes to an hour or more.



The position of the hand is very characteristic, namely, the so-called *main d'accoucheur*. The fingers are flexed at the meta-carpo-phalangeal articulations, extended at the two distal phalangeal joints and adducted. The thenar and hypothenar muscles are contracted so as to deepen the palm of the hand, and the thumb is strongly adducted so as to approximate the last digit with which it may be in contact. The wrist may be flexed and drawn toward the ulnar side, and the flexor muscles of the forearm are more or less tonically contracted. In severe cases, there is flexion at the elbow and the arms are approximated to the thorax.

The feet are in a position of talipes-equino-varus, with the toes generally flexed. The muscles of the sole of the foot and calf of the leg are tense. Bilateral symmetry is apt to prevail throughout. Active motion in hands and feet is impossible, while passive motion invariably causes pain. The patient is unable to walk or to use a knife and fork, and the tonic muscles are tender to touch. In children, particularly



those suffering from rickets, laryngismus stridulus is a common additional symptom, but when occurring in adults, it is of serious moment. As the severity of the case increases, the trunk muscles become involved, and general convulsions may result. Spasm of the diaphragm and intercostals may cause fatal impediment to the respiratory function. Tonic contractions of the facial muscles are seen only in the severer attacks, and involvement of the ocular muscles is rare.

During the attack, the mechanical and electrical excitability of the motor nerves is increased, especially the facial nerve. Attempts to produce the Trousseau phenomenon only increase the degree of spasm. At this time, the fibrillary contractions of the muscles, if present, are most marked. The hyperæsthetic condition of the sensory nerves to mechanical irritation, is plainly demonstrated by gentle blows of the hammer on the nerve trunk; this procedure gives rise to pain in the nerve distribution. These altered conditions of the motor and sensory nerves vary in intensity with the attacks of spasm.

The temperature is generally normal, but may be slightly elevated at the onset. Edema of the backs of the hands and feet may occur, as well as localized perspiration.

This is the usual picture of the attack of muscular spasm; but we are not justified in making a diagnosis of tetany on this condition alone. During the interim, certain symptoms must persist. The most valuable and conclusive one is that of ability to reproduce the spasm at will by nerve pressure, as demonstrated by Trousseau. The facial muscles should respond to gentle blows with the finger-tip or hammer on the branches of the seventh nerve, as Chvostek has pointed out. This may be difficult to obtain in children, owing to fright and crying. Finally, there should exist an electrical hyperæsthesia of both motor and sensory nerves to the galvanic current, and in a lesser degree to the faradic current.

The condition of the cutaneous and tendon reflexes is of no aid in diagnosis, and the reaction of the sensory nerves to touch, to sharp points, and to heat and cold is generally not altered. The reaction of degeneration and trophic changes are of great rarity, as well as auditory and optic symptoms, so much so that it is questionable whether they have any connection with the disease under consideration.

**Course and Termination.**—The average course of the epidemic variety, as seen in certain European cities, is mild, and causes but slight constitutional disturbance. The period of spasm lasts for one or two weeks, and at the end of the third week, the latent symptoms have disappeared. The termination is favorable.

The gastro-intestinal variety comes on generally at a late period of the underlying pathological condition, when the health of the patient is already seriously impaired. The tetany is chronic and is apt to persist with increasing and alarming severity, until the patient succumbs, generally as a result of the original disorder.

Tetany following the acute infectious diseases, exposure to cold, exhaustion, rickets, and toxic conditions (ergot, alcohol, chloroform and uricæmia), generally runs a mild course.

Tetany coming on during the periods of gestation and lactation is almost never serious, and it commonly ceases at once on the birth of the child, or after its re-

moval from the breast. Tetanic spasms arising coincidently with labor pains are often severe and alarming, and have been accompanied by fatal post-partum hemorrhage.

The course of these cases arising after total thyroid excision, has proved rapidly fatal in eight of Billroth's twelve cases, remained chronic in two, and has been followed by recovery in two. There is much clinical evidence to show the intimate connection between the removal of the thyroid gland and its various pathological conditions on the one hand, and tetany and myxedema on the other.

In general, we can say that a patient has recovered from an attack of tetany only after the so-called latent symptoms have disappeared. In following the disorder to a fatal termination, the spasms will be observed to increase in frequency, severity and extent. The end follows in consequence of the involvement of the glottis, or the intercostal muscles and diaphragm, or exhaustion, but, far more often, is death the result of some underlying disease.

**Pathological Anatomy.**—Most of the symptoms of tetany are best explained on the basis of a central origin, namely, in the anterior cornua of the medulla oblongata and the cord, but, notwithstanding many careful investigations, there is as yet no known lesion for the existence of those phenomena. A consideration of theories will be of little avail.

**Diagnosis.**—By way of summary, we are justified in making a diagnosis of tetany provided the following conditions are present:

- (1) Characteristic tonic spasms occurring as already considered in detail.
- (2) Trousseau's phenomenon—production of spasm by nerve pressure.
- (3) Chvostek's phenomenon—increased mechanical excitability of motor nerves.
- (4) Erb's phenomenon—increased electrical excitability of all nerves.

The most difficult differential diagnosis is between tetany and hysteria. Trousseau's phenomenon never appears in hysteria, and hysterical contractions are rarely bilateral and similar to those of tetany. Psychoses are rare in tetany, and prominent in hysteria. In this latter affection, there are many additional symptoms, including: sensory disturbances, emotional outbreaks, optic deficiencies, convulsions with more or less loss of consciousness, ovarian tenderness, transitory paralyses, as well as the history of nervous tendencies.

**Tetanus** need never be confused with *tetany*, in that the spasms begin in the masseters and allied muscles; there is apt to be pyrexia, and the progress of the case is generally from bad to worse. A source of infection is often found, while the latent symptoms of tetany are absent.

**Prognosis.**—In the epidemic type, the prognosis is excellent, although an occasional fatal case has been recorded in children sick with rickets, and in adults suffering from some additional complication. The prognosis in cases following thyroidectomy is comparatively grave. Of 23 gastric cases, reported by Bouveret and Devic, 18 died. Cases arising during the periods of gestation and lactation, end favorably on removal of the exciting cause; but tetany excited by labor pains has occasionally led to a fatal result.

The reappearance of certain of the exciting causes commonly produces a recurrence of tetany, namely,



exacerbations of the gastro-intestinal symptoms, and all conditions connected with the puerperium. In general, it is safe to conclude that the prognosis of tetany is good, but that the appearance of general convulsions and disturbances of the sensorium, should give cause for apprehension.

**Treatment.**—There is no specific treatment for this neurosis, therefore all efforts should be directed towards alleviating symptoms, and the removal of all predisposing causes. This will include hygienic and sanitary improvement.

The acute attacks of spasm are best overcome by rest in bed, and the use of hot fomentations to the extremities of adults, and warm baths for children. Bromide and chloral are of undoubted value in some instances, particularly during the interim, but codeia and morphia are more satisfactory for relieving the distress consequent on the tonic spasms.

The usual measures for the treatment of laryngismus stridulus should be followed if this complication should arise. Tetany as a complication of rachitis, yields most promptly to iron, cod-liver oil and phosphorus.

In gastro-intestinal cases, great relief follows the judicious use of the stomach-tube, together with careful diet, and the use of suitable drugs to overcome the tendencies to fermentation.

The induction of premature delivery is almost never called for to relieve tetany arising during the period of gestation, for the symptoms do not endanger the life of either mother or child, and will cease at delivery or soon after. If arising coincidentally with the labor, rapid delivery is indicated. Where the tetany comes on during lactation, it is advisable to resort to artificial feeding.

The experience to be gleaned from cases of total thyroid excision, is that one-fifth of the gland should be left as a preventive measure. The best means of meeting this most dangerous complication arising after such operations, seems to be in the use of the thyroid extract. However, although both successes and failures have followed its use, it should be tried in that we know of nothing better. The occurrence of certain toxic symptoms shows that the preparation and dose of the extract should be carefully considered.

Massage and electricity are contraindicated, for they serve only as irritants to hyperæsthetic nerves, and acute attacks frequently follow their use.

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#### ON THE TRAUMATIC RUPTURE OF OVARIAN CYSTS, WITH REPORT OF A CASE.<sup>1</sup>

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I HAVE been led to an examination into the results of this accident by the following case:

C. D., twenty-eight years old, had a history of abdominal enlargement of a year's duration. Menstruation, previously regular, ceased eleven months ago. She had never had any pain that could be referred to the pelvic organs. She was small but well nourished. Palpation was very unsatisfactory. Owing to the tenseness of her abdomen and the hymen being intact and rigid, I asked for an ether examination, with the understanding that the patient was to return home afterwards to consider with her family the question of possible operation.

Under ether, there was apparently a median, well-marked globular tumor, rising nearly to the umbilicus and displacing the uterus forward. After a superficial bimanual examination I turned the patient over to two students (graduates) for examination, and then to my house-officer. He could not find any tumor; and on my undertaking to demonstrate it to him, I was equally unsuccessful. The first of the gentlemen who had examined after me was sure he had felt it plainly; the second was in doubt. Feeling certain that when I first examined there had been a tumor, it seemed to me that an immediate laparotomy was the safest thing to do, although the patient, who was under ether, had not been prepared for operation in any way, nor had I her consent. So, although the thought of a phantom tumor obtruded itself most unpleasantly, I had the patient hastily scrubbed up, and within fifteen minutes of the disappearance of the tumor its empty sac was brought through the abdominal incision. Upon opening the peritoneum there was a gush of fluid—at first typically ovarian, thick, brownish-yellow, but clear; then sanguineous, gradually becoming thinner and more red, until finally it was apparently clear blood. Even when the collapsed cyst of the left ovary was hanging outside of the abdomen by its long pedicle, steady, moderately free arterial hemorrhage kept

<sup>1</sup> Read before the Boston Society for Medical Improvement, May 18, 1896.

up from the edges of the rent from two vessels of quite respectable size, as well as a certain amount of oozing from veins—in all, to an extent that to my mind more than justified an emergency operation.

The patient went home on the fifteenth day.

The cyst was practically unilocular. Its wall was apparently perfectly healthy in every part, and I should say about 1.5 millimetres thick. There were no adhesions. Its anterior surface presented a rent 15.5 centimetres (6 inches) in length, running obliquely from the left upper corner to the right lower one, that is, in what was its vertical axis when the tumor was in position. Its capacity was just under two quarts, while the amount of bloody fluid in the abdomen was more nearly three quarts than two.

Causes of rupture of ovarian tumors may be divided into (1) those arising within the tumor itself, and (2) external causes. The first produce the spontaneous ruptures of frequent observation. In the advancing growth of a proliferating cystoma, for instance, as the walls of the daughter cysts are absorbed, they may rupture outwardly as well as inwardly, especially when there has been any localized necrosis or impairment of nutrition of the cyst wall. So, too, papillary excrescences, as they impinge against the inner wall of a cyst, may cause pressure necrosis and perforation. While theoretically there should be some exciting cause in even the so-called spontaneous ruptures, in very many of them none can be found. In a large series of intraperitoneal ruptures collected by Duffner, a cause could be found in only about 38 per cent., and in very many of these the assigned cause was at least questionable.

External causes of rupture all come under the general head of traumatic, but it is well to further divide them into those due to movements of the body as a whole, and those due to trauma pure and simple.

This paper is based upon the study of 108 collected cases in which there was a trauma that fairly could be regarded as the immediate cause of rupture. I have not included in the percentages cases where it was the result of torsion, or when connected with parturition except when due to surgical interference.

In about 30 per cent. of these cases rupture took place as the result of some sudden, or constrained, or violent movement of the patient. These were divided as follows: purging and vomiting, eight;<sup>2</sup> bending over, three;<sup>3</sup> sudden movement in bed, two;<sup>4</sup> sudden effort, nine;<sup>5</sup> coughing, two;<sup>6</sup> laughing, one;<sup>7</sup> defecation, one;<sup>8</sup> lifting weight, three;<sup>9</sup> dancing, one;<sup>10</sup> running, one;<sup>11</sup> eclamptic convulsion, one.<sup>12</sup>

In some of the cases ascribed to purging and vomiting, it may be questioned whether the effect was not confounded with the cause. In Raborg's case the patient was seized with severe vomiting while riding in a carriage, and reached home in collapse. Here the cyst probably ruptured from the jolting of the carriage; hence the vomiting.

There is a group of cases hard to classify, in which rupture follows certain accidents or conditions arising within the body, such as torsion of the pedicle. Thus, in 57 cases of torsion reported by Thornton, there were nine of rupture, one of the effects of torsion frequently being a rapid augmentation in the size of the tumor

from venous stasis. Trauma may here be the indirect cause, as in Hofmeier's case, in which rupture followed a torsion produced by a gynecological examination. Rupture has frequently been seen associated with labor. Many of the cases following labor have in reality been due to torsion, which is especially apt to occur at that time. On the other hand, rupture may be due directly to compression of an intra-pelvic prolongation of the cyst by the fetal head (Fischel). Although generally the muscular efforts incident to parturition are to blame, the direct pressure of the parturient uterus (Scanzoni), or of the enlarging gravid uterus, or of some other tumor (Smith), may also cause the accident. Here, too, come the rare cases of rupture from pressure against the bony wall of the pelvis, absorption going on until the wall is so thin that the slightest shock causes rupture (West, two cases).

Under certain conditions tapping might be regarded as causing a traumatic rupture. There are many cases known in which the leakage of the contents of the cyst followed the use of the trocar (Aronson, Barth, Putsch, Dupuytren, etc.). Tapping may be even more distinctly traumatic; pressure with a dull trocar against a tough cyst wall has increased intracystic pressure enough to cause an extensive rupture of the wall at a distant weaker point (Walderstrom).

Considering the dangers to which a woman is exposed who carries in her abdomen a large, more or less tense sac, it would not be surprising to find in medical literature, especially in that of the days before the early extirpation of ovarian tumors, a considerable number of cases of rupture due to external violence; but, after a rather careful review, I have been unable to find more than 70. Undoubtedly, a large number of these were polycysts in which the accidents occurred at diseased points; so that the number of healthy-walled cysts reported as ruptured by violence must be regarded as small, although, of course, some have escaped my attention.

Most of these 70 traumatic cases come under the head of falls (34)<sup>13</sup> of varying degrees of severity. I have excluded cases in which the fall was only indirectly the cause, that is, where a localized peritonitis was caused, which subsequently became the seat of a "spontaneous rupture."

In these 34 cases the fall is expressly stated to have been upon the abdomen in only twelve. While in most of the others the rupture was very positively the result of direct trauma; in many the mechanism was certainly much more complex; and it seems at least fair to question whether the violent and irregular contraction of the abdominal muscles incident to a fall were not as much to blame as the impact of the fall itself.

There remain 36 cases of pure external violence, divided as follows: a blow, seven;<sup>14</sup> a kick, six;<sup>15</sup> the use of forceps, three;<sup>16</sup> version, two;<sup>17</sup> run over by a wagon, one;<sup>18</sup> raising a depressed ensiform cartilage, a bottle being used as a cupping-glass, one;<sup>19</sup> concus-

<sup>2</sup> Broomall, Duncan, Percival, Pollard, Polallion, Sängner, Pozzi, Warn.

<sup>3</sup> Protopopow, Trusseau (two cases).

<sup>4</sup> Polallion, Schmidt.

<sup>5</sup> Aronson, Percival, Schmidt, Delpech, Dufau, Wells, Boivin, Olesius, Höring.

<sup>6</sup> Hamilton, Richter.

<sup>7</sup> Morgagni.

<sup>8</sup> Crisp.

<sup>9</sup> Goodell, Hetman, Truckmüller.

<sup>10</sup> Wells.

<sup>11</sup> Abernethy.

<sup>12</sup> Boech.

<sup>13</sup> Baecher, Barry (two), Beaumont, Blundell, Buckham, Bright, Dufay, Danville, Deville, Farrar, Galtzhill, Gantier, Gentles, Guerard, Herepath, Hüss, Kiwisch, Köhler, Lambert, Levepne, Lowndes, Marchaud, Mauriceau, Montgomery, Nebinger, Palm, Simpson, Spiegelberg, Tilt, Wells (two), Wertheim, White.

<sup>14</sup> Addison (two), Beatson, Liddle, Nicholson, Oppolzer, Wiltshire.

<sup>15</sup> Hupier, Barnes, Bezenoet, Nelaton, Satterthwaite.

<sup>16</sup> Kiwisch, Mellon, Nolting.

<sup>17</sup> Baudeloque, Polallion.

<sup>18</sup> Macmillan.

<sup>19</sup> Hodge.

sion from jump, one; <sup>20</sup> concussion from sudden descent of elevator, one; <sup>21</sup> drawing abdomen tight to puncture, one; <sup>22</sup> tapping with dull trocar, one; <sup>23</sup> coitus, one; <sup>24</sup> masturbation, one; <sup>25</sup> and examination, ten.<sup>26</sup>

In by far the greater number of these 108 cases the tumor was of fair size. Its character was stated, or might be inferred, in 62, divided as follows: surgical monocysts, 43; polycysts, 16; dermoids, 3; but as in most cases there was neither operation nor autopsy, an attempt at exact classification would be futile. It is even possible that many of them were merely cases of encysted peritonitis, which often have thin walls, and from their immobility are especially exposed to the vicissitudes of examination. This seems very probable in several of the cases reported as rupturing under examination:

**Chadwick.** A thin-walled abdominal cyst collapsed under examination. No symptoms followed. Dr. Chadwick regarded it as probably an encysted peritonitis, although it may have been a parovarian cyst.

**Hunter.** A cyst the size of an orange disappeared during examination, without the patient being aware that anything had happened.

**Ruge.** A tumor the size of a fist was felt by several observers while the patient was under ether. At a laparotomy the next day nothing was found.

In others of the cases occurring during examination the cyst wall was previously diseased:

**Rickards.** Death from peritonitis followed rupture of a cancerous cyst of the ovary by vaginal examination.

**Verneuil.** Death ten days after examination. Patient found to have pyosalpinx and septic peritonitis and a small ruptured cyst, the wall of which was gangrenous. She had peritonitis when examined and it is doubtful whether examination had anything to do with the rupture.

In Seymour's case the wall was diseased.

The only other case that I have found reported of a presumably healthy-walled cyst ruptured by examination, is that of Aveling. The fact that not more are recorded may well be due to a not unnatural reticence. It is highly probable that the accident is much more frequent than would appear.

It is difficult to draw inferences as to the amount of force needed to produce a rupture, as the conditions vary, depending partly on the toughness of the cyst wall and partly upon the resistance of the abdomen. The only other cases of rupture under anesthesia, in which the latter is of less importance, were those of Ruge (either a thin-walled parovarian cyst or an encysted peritonitis), and of Sanger (in which there was a necrotic patch at the point of rupture).

Statistics as to the length of the tear in traumatic cases are sadly wanting. The longest ones that I have found mentioned are those in my case (15.5 cm.) and in that of Aveling (20 cm.). Duffner's figures as to the most frequent seat of rupture do not hold as good for traumatic cases as for those upon which his observations were based. According to him, in 32 cases it was 13 times on the posterior aspect of the tumor, and in 10 on the superior; while in the seven operated cases of traumatic rupture it is not stated to have been on the posterior surface in a single one. Apparently, trauma causes rupture by impact rather than by *contrecoup*.

<sup>20</sup> Blundell.

<sup>21</sup> Walderstrom.

<sup>22</sup> Aveling, Chadwick, Lawres, Hunter, Verneuil, Seymour, Hofmeier, Rosner, Ruge, Storer.

<sup>23</sup> Barnes.

<sup>24</sup> Peck.

<sup>25</sup> Rosner.

<sup>26</sup> Bolnet.

## RESULTS.

Shock may cause immediate death. In eight cases <sup>27</sup> it took place either at once or before peritonitis could have developed. Some of these may have died from hemorrhage; but, in default of proof, I have put them all under the head of shock. Besides these eight immediate deaths, there were 16 others <sup>28</sup> in which the ultimate death from peritonitis was plainly the result of the rupture. As the fate of the patient is stated in only 82 cases, this would give a total mortality of 29.2 per cent., or, excluding the seven operated upon, of 32 per cent.

Twenty-two cases (26.8 per cent.) recovered after more or less peritonitis; about half of these were "unilocular." Thirty-six (44 per cent.) recovered absolutely without any symptoms of peritonitis; about 90 per cent. of these were "unilocular," and possibly many parovarian.

An average of the estimates of five writers <sup>29</sup> of the mortality in mixed spontaneous and traumatic ruptures is 41 per cent.—somewhat higher than that of the purely traumatic cases, as might be expected, considering the greater tendency to peritonitis in the spontaneous cases, from their more complex contents.

The clinical picture of traumatic ruptures, as compared with spontaneous, is affected by the fact that, as a rule, there is a sudden outpouring of a much larger amount of fluid than is the case in "bursting cysts." Thus the patient, in addition to feeling sudden pain, with the possible consciousness that something has burst inside of herself (10 cases), may feel as if the peritoneal cavity were suffused with hot fluid (Scanzoni), "as if the bladder had burst" (Wiltshire), "as if water were boiling up inside of herself" (Olezius), or even be aware of the sudden change in the equipoise of the abdominal contents (Morgagni). The initial pain varies from agony, producing nausea or syncope or even death, down to such slight discomfort that the patient is almost unaware of the injury. When the initial shock dies away it is often replaced by the condition known as peritonism, sometimes of very grave character. The subsequent fate of the patient depends upon the character of the escaped fluid. The contents of a simple parovarian cyst, for instance, uncontaminated by tapping or other extraneous interference, are generally harmless; and such cases frequently recover without symptoms, except a transient free diuresis (Wells, 20 quarts in three days). The rent in such cysts is apt to close of itself, and soon the tumor appears again. When it does not close, we may get a clinical picture like that in Simpson's case in which there was for months polyuria, copious dejections, free diaphoresis and flushed face, the absorption and elimination of fluid going on as fast as it was poured through the rent. In other cases the cicatrized edges of an old rent have been found some time later, little or no fluid having been secreted meanwhile. It is expressly stated that there was no return of the tumor in nine cases; <sup>30</sup> and excluding probable errors in diagnosis, it seems established that the spontaneous cure of ovarian tumors by rupture can occur. But this result is sufficiently rare, although, according to

<sup>27</sup> Danville, Hamilton, Hodge, Liddle, Peck, Montgomery, Wells, Boechat.

<sup>28</sup> Addison, Bright, Broomall, Barnes, Guerard, Delpech, Herepath, Kiwisch, Mellon, Nolting, Nicholson, Folaillon, Palm, Rickards, Verneuil, Warn.

<sup>29</sup> Tilt, Puech, Duffner, Palm, Nepvue.

<sup>30</sup> Bezenecet, Bolnet, Barry, Nebinger, Oppolzer, Olezius, Popow, Tilt.

Gallez, the ancients counselled the cure of these tumors by smashing them with a mallet.

Should, however, the contents of the cyst be other than simple serum, peritonitis is extremely probable (32 per cent.), and the more complex the character of the cyst the greater the danger. A ruptured dermoid gives almost as bad a prognosis as that of a cyst actually suppurating. Of course, the probability of auto-inoculation in the case of the rupture of malignant cysts is self-evident.

Hemorrhage, the immediate danger in my own case, seems somewhat rare. This is but natural, for rupture must take place, other things being equal, in the line of least resistance, which generally would not be that crossed by arteries of any size. In the case I have reported, the examiner, compressing the cyst firmly between his two hands, caused a rupture in the direct line between them, in spite of the fact that two small arteries crossed it. While venous oozing would be apt to cease of itself, there is a variety that may be persistent. In the rupture of a papilloma, the sudden relief from pressure may cause, according to Grieg Smith, a passive oozing from the abundant veins of the intra-cystic growth. So, too, the hemorrhage following rupture due to the passive congestion of torsion is sometimes serious (case of rapid death of Wells). Probably in many cases the symptoms of hemorrhage were so confused with those of shock as not to attract attention. The persistent character of the hemorrhage from peritoneal vessels is shown by Wertheim's case, in which an operation four days after rupture showed it still going on.

In recent years several cases have been reported in which the urine showed the presence of peptones after a rupture (v. Jaksch, Köhler).

Throughout this paper I have been considering only cases of intra-peritoneal rupture. Should the point of greatest weakness be agglutinated to any of the neighboring parts, trauma may cause the contents of the cyst to be discharged by the rectum or vagina or bladder, as in a case I saw some years ago, or directly through the abdominal walls. In the curious case of Protopopow, the woman, on bending over to put on her slipper, felt something give way, with great pain in the abdomen and left buttock. The next day there was a diffuse swelling of the left thigh, with diminution of the tumor. Here the rupture took in the base of the cyst, with its contents becoming infiltrated, *viâ* the broad ligament, between the muscles of the thigh. It may, however, have been a case of rupture of an intra-ligamentous cyst.

As to treatment, if the patient is seen some time after the accident and there be no signs of peritonitis, an expectant policy is indicated; if the patient is seen at once, and there be no signs of hemorrhage, an expectant treatment may be pursued if we are reasonably certain that the cyst was a simple serous one, but few of us can be absolutely sure of the nature of a cyst until we have incised it. The objections to exploratory tapping are many; and it seems to me far better to operate at once, without waiting to be forced to do so under probably much more unfavorable circumstances, or at least to operate as soon as the primary shock begins to diminish, if present. By immediate operation is not only lessened the danger of peritonitis, but the necessity of ultimate operation is avoided as well.

On the other hand, if the question of diagnosis

wavers between rupture of an ovarian cyst and that of an extra-uterine pregnancy or torsion, the indications for operation are certainly equally urgent under those conditions.

Should peritonitis have developed, the question becomes more complicated, and each case must be judged for itself; but if there is a reasonable hope that the patient will survive the immediate shock of operation under such conditions, it is best to give her the chance.

In the eight cases reported<sup>21</sup> in which there was operation within four days of traumatic rupture, including at least two in which peritonitis had developed, there were no deaths, which contrasts sufficiently favorably with the 32 per cent. mortality in unoperated cases. Even cases of rupture into the bladder or intestine had better be handled radically.

There remains the very interesting question of what to do when a possibly phantom tumor disappears under one's hands. While an unnecessary laparotomy is doubtless a misfortune, both to operator and patient, it seems to me that the surgeon is far more blameworthy if, when he has a reasonable certainty that he has been so unfortunate or unskilful as to rupture a cyst, he temporizes and so exposes his patient to the dangers I have outlined, rather than boldly operates and probably finds an excellent justification for so doing.

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## Clinical Department.

### OVARIAN CYSTOMA, WITH UNUSUALLY THICK CYST WALL.<sup>1</sup>

BY W. H. BAKER, M.D.

Miss W. H. entered the Free Hospital for Women, May 5, 1896. She was fifty-two years of age, and had never been married. By occupation she was a school-teacher. She first noticed a "bunch" in the right side of her abdomen twelve years before admission to the hospital. It caused her no trouble, however, for seven years; then, after overwork, she began to have trouble in getting up or sitting down. For the past two or three years, as the size of the abdomen increased, a dragging sensation and a sense of weight had been present.

There was nothing unusual in regard to her menstrual function, which ceased at forty-eight years of age. There had been no marked loss of flesh. May 7th, the accompanying tumor was removed through an abdominal incision, 7½ inches long. As I was in doubt in regard to the character of the growth, I felt it wiser to make a long incision, and to remove the tumor without trying to evacuate it. No adhesions were present, but the surface of the parietal peritoneum was markedly injected and roughened. On cutting open the cyst it was found to be filled with old blood.

The following is the report of Dr. W. F. Whitney on the specimen:

"A large cystic growth from the region of the ovary. The wall was fully an inch thick and fibrous to the eye. In the centre was a cavity with a smooth wall. Microscopic examination showed the wall to be fibrous in structure and the inner surface clothed with a few large flat cells. In some places the wall was very thin. The fluid was not seen, but the growth seems to be a cystoma with an unusually thick wall."

The case is of interest on account of (1) the long continuance of the tumor (twelve years), which for a cystoma of the ovary is infrequent; and (2) on account of the very thick wall of the cyst, which made it simulate somewhat, before the operation, a solid tumor.

**DERMATITIS CAUSED BY X-RAYS.**—Dewey reports in the *British Medical Journal* of November 7th the case of a man of thirty-five who was exposed to the x-rays in order to establish the diagnosis of renal calculus. Two exposures of an hour and an hour and a half each, resulted in a severe irritative dermatitis over the exposed side of the abdomen. Exfoliation of the epidermis followed, and a granulating surface was left, like that after a severe burn, which required skin grafting, and the sore had not healed in sixteen weeks.

<sup>1</sup> Reported before the Boston Society for Medical Improvement, May 18, 1896.

## Medical Progress.

### RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND WM. DUDLEY HALL, M.D.

(Concluded from No. 20, p. 494.)

#### **PATHOLOGICAL ANATOMY OF GRANULAR CONJUNCTIVITIS.<sup>14</sup>**

VILLARD's recent publication<sup>15</sup> is a very complete study of all that concerns the pathological anatomy of trachoma. The author divides the conjunctiva into a superficial or adenoid layer in which the granulations develop and a deeper or fibrous layer that the trachoma granules generally respect. In granular conjunctivitis he finds, that the epithelium covering the granulations is always more or less altered, the cylindrical cells becoming pavement in type; also the inter-cellular intervals are enlarged, and often contain migratory leucocytes. The latter can so invade the epithelium that it is next to impossible to differentiate it from granulation tissue by feeble magnification. The epithelium between the granules is usually not affected. Numerous mucous cells are frequently observed to accumulate in furrows of the conjunctiva, giving rise to an appearance which upon section resembles a glandular structure. These are the so-called "glands of Ivanoff," and which the author does not consider to be true glands. In very old granular conjunctivitis the epithelium is transformed into a true stratified pavement epithelium analogous to that of the vagina or the lips. The granulation itself consists of vessels with a framework of connective tissue and true epithelial elements. The blood-vessels are constant and absolutely normal. The framework of the granulation is composed of these blood-vessels, true connective-tissue fibres, and inter-cellular reticulum, visible in sections, and which is probably a reticulum of coagulation. The cellular elements habitually found in the granulation are exclusively mesodermic in their origin, are lymphocytes, mononucleated leucocytes showing often karyokenetic figures, cells of large size which are probably from the framework, and phagocytes. There are found, but more rarely, polynucleated leucocytes and giant cells, but very different from the giant cells seen in the tubercular nodule. The structure of the granulation is the same throughout, and its tissue is quite active, the central portions being not at all degenerated. Comparative study of the trachoma granule and the structure of the lymphatic gland shows resemblance between the cellular elements of the two tissues. The fibrous tissue surrounding the granulation contains the clasmatoocytes recently described by Ranvier.

During his studies upon the normal conjunctiva M. Villard found in rabbits conditions of the conjunctiva much resembling trachoma in man, and by the aid of special technique he is able to demonstrate lymphatic vessels which are connected directly with the granulation.

The verification of this is very important as it brings more closely together the granulation and the lymphatic glandular tissues. The author believes by analogy that the same condition exists in man. The granulation probably grows by the production of a very small nodule which had developed in the midst

<sup>14</sup> *Annales d'Oculistique*, August, 1896.

<sup>15</sup> *Thèse de Montpellier*, 1896.

of the superficial or adenoid layer of the conjunctival membrane. This nodule increases by the multiplication of its mononucleated leucocytes which are found normally in this layer and by the proliferation of its connective tissue. Diapedesis does not play an important rôle in the production of the granulation. The granulation having completely developed retrogrades differently according to circumstances. At times the epithelium invaded and eroded by migratory leucocytes, being unable to resist, falls easily into fragments; at other times, the epithelium having become elevated and detached from the deeper parts by hemorrhagic effusion becomes thus necrotic. In every case, however, there is produced a follicular ulceration which finally becomes filled with cicatricial tissue. The granulation, however, does not always ulcerate, but can become invaded and overwhelmed by connective tissue fasciculi from the deeper parts. In trachoma which seems to be cured and of which the author has examined one case, the epithelium is stratified and pavement, and approaches the dermo-papillary type; the granulations have disappeared and there is found in the membrane very resistant fibrous trabeculæ indicating that the connective tissue has undergone a cicatricial transformation.

#### POST-DIPHTHERITIC OCULAR TROUBLES.<sup>16</sup>

The post-diphtheritic complications occur during the first few weeks after the onset of the disease and are not directly due to the presence of virulent microbes. The paralysis of the accommodation, first noted by Donders in 1861, is not unusual. It is characterized by being bilateral, an absence of pupillary paralysis, and spontaneous cure in a few weeks. Trouble with the extrinsic muscles is more rare, the proportion between the abducens and the ciliary muscle being about one in ten. It is usually bilateral, cures spontaneously and a little more lasting than the ciliary muscle. Paralysis of the abductors often develops after the accommodative paralysis, and progresses while the other is retrograding. Paralysis of the third and fourth cranial are infinitely more rare, and of the trigeminus almost never. The causes are obscure. There are four hypotheses: The first admits a peripheral neuritis; the second a central lesion of which the neuritis would only be a consequence; the third makes out the troubles to be due to hemorrhagic or ischemic foci in the locality of the nuclei; and finally Hochhaus has noticed in one case a myositis combined with a peripheral neuritis and considers the paralysis as dependent upon both affections. The fact that the paralyses are so frequent since the application of serum-therapy would be difficult to explain if the antitoxic serum destroyed the toxin; but Roux has shown that the toxin and antitoxin do not neutralize one another by a simple chemical action.

#### TOTAL PARALYSIS OF THE ACCOMMODATION AFTER EATING OYSTERS.<sup>17</sup>

Several days after a dinner at which cooked oysters were served, the guests were seized with violent colicky pains and diarrhea, together with soreness and dryness of the throat. These symptoms were accompanied with an inability to read. One of them who was only affected one week after the dinner and who consulted Feilchenfeld on the fourteenth day, still complained of

dryness of the throat, slight diarrhea, inability to read, together with diminished vision for distance. The pupils were normal, and their reaction was preserved. There was an astigmatism of +2.50 D., with nearly total paralysis of the ciliary muscle. In order to read at 18 centimetres, after correcting the astigmatism a +8 D. spherical was necessary. This paralysis disappeared in two weeks.

#### ANTISTREPTOCOCCIC SERUM PREVIOUS TO THE CATARACT OPERATION IN DIABETICS.<sup>18</sup>

Boucheron, at the April meeting of the Society of Biology, in France, while speaking about the prophylactic use of the antistreptococci serum previous to the cataract operation in diabetics, said that strict antiseptics makes many operations possible for those who have diabetes, and that there was no doubt that such patients were more subject to suppuration than the non-glycosuric; hence it was very interesting to find out under what circumstances the causes of suppuration would be removed. The streptococci infection is one to which it is possible to oppose the antistreptococci serum; therefore the employment of this serum is possible prophylactically upon such as are suffering from such infection when union without suppuration is especially necessary, as in the cataract operation. He has had the opportunity to observe a diabetic cataract patient who also had a lymphangitis of the foot and leg, to whom, by the advice of Dr. Marmorek, an injection of twenty grammes of his serum was given. Taking advantage of the time when by the injection the streptococci had become most attenuated, he made the extraction using the strictest precautions. The wound healed by first intention without the slightest sign of infection and the ultimate result was perfect. The patient, who was sixty-six years old, had 46 grammes of sugar per litre in his urine. The lymphangitis was benign.

The author claims this to be the first case of its kind to be published.

#### TWO CASES OF PUERPERAL SEPTIC EMBOLI OF THE EYE.<sup>19</sup>

In regard to septic emboli of the eye during the puerperal state, Januszkiewicz contributes the following observations which he made at Hirschberg's clinic. As shown by the literature of the past, this is a very rare complication and has an unfavorable prognosis. In his monograph<sup>20</sup> Hirschberg states that the prognosis must be considered as almost always fatal. The primary disease caused death in all six of the cases he mentioned. He mentioned one of Martin's patients, in whom only one eye was affected, as having recovered; and later he described a case of his own, both eyes being involved, as ending in recovery.

This affection was described for the first time in 1829 by Drs. Hall and Hagginbottom, who had fatal results in their six cases. In the treatise of Dr. Axenfeld on "Purulent Metastatic Ophthalmia," which was published in Graefe's "Archives" in 1895, we find a careful collection of all the cases known up to that time. Of the 64 cases in which the affection of the eye was the result of the puerperal process, only 17, that is, 26.5 per cent., survived. Among the latter it was bilateral in only one case.

Of the last two cases seen by Dr. Hirschberg one

<sup>16</sup> Schirmer: *Annales d'Oculistique*, August, 1896.

<sup>17</sup> Feilchenfeld: *Klin. Monatsbl. f. Augenheilkunde*, April, 1896.

<sup>18</sup> *Annales d'Oculistique*, August, 1896.

<sup>19</sup> *Centralbl. f. prakt. Augenheilkunde*, July, 1896.

<sup>20</sup> *Arch. f. Augenh.*, von Knapp und Hirschberg, Bd. ix.



was a woman, thirty years old, who aborted four months before. The first labor, five years previously, had been normal. For three weeks after the delivery she had been quite ill with high temperature, and on the eighth day the left eye became involved, blindness ensuing two days after. No pain. Metastases in the heart, lungs and kidneys. During the next four months multiple abscesses of legs and arms accompanied by high fever. Eight days previous there was a new rise of temperature; and the left eye, which up to this time, although blind, had not been painful, gradually protruded from the orbit, while the patient suffered great pain. The left eye was now strongly injected; there was chemosis, pericorneal injection, and a hazy cornea. At the bottom of the anterior chamber there was a small hypopyon, occlusion and exclusion of the pupil, increased tension, slight pain on pressure, vision nil. Right eye in all respects normal. Again, in ten days the patient appeared, with no pain or chemosis and only slight injection; and two months later the globe was without irritation, soft and beginning to atrophy. During the last four weeks the temperature had been normal. Since that time she has been seen repeatedly, and her general condition has remained satisfactory. The urine has always been normal.

The other patient was thirty-six years old, and six months before had been delivered of her seventh healthy child, the accouchement being in every way normal; but four days later there was a rise of temperature, and a fever which continued for eleven weeks. During the course of the third week she experienced severe pains in the forehead and in both eyes, and at the same time great swelling of the eyelids. When she could, at the end of a fortnight, again open her lids she could no longer see. During the third month there was an abscess of the left knee, which later came to operation. At present there is no light-perception in either eye; both globes atrophic; occlusion of pupil in both, with adherent leucoma. Considerable headache and general weakness. The left knee is immobilized in a plaster bandage. No fever and a normal urine. The second case is especially remarkable as being the second recovery after puerperal septic emboli, the involvement being bilateral.

#### THE PECULIAR COLOR OF THE FUNDUS IN MONGOLIANS.<sup>21</sup>

Inouye, the younger, as the result of numerous examinations, comes to the following conclusions:

(1) The color of the fundus in the Mongolian race is usually of a brownish-red, while that of the western nations appears as yellowish-red. The pigmented epithelial layer of the Mongolian is much thicker than the Caucasian, and for this reason it rarely happens that the vessels of the choroid can be seen through the retina; also the albino is very unusual; and, finally, the disappearance of the pigmented epithelial layer in the periphery of the fundus is not usually noticed, although it is usually considered as a senile change.

(2) The edge of the optic disk appears to be more sharply defined than it is in the case of the Caucasian, and the greater the amount of pigment the more distinct it is. For this reason when first he came to Europe he frequently mistook health for disease.

<sup>21</sup> Centralbl. f. prakt. Augenheilkunde, July, 1896.

Frequently the disk is quite well defined, although a neuro-retinitis may be present.

(3) The fundus reflex of the Mongolian is greater than it is in the Caucasian. There is no doubt that the richer the fundus is in pigment, so much the more evident is the reflex of the retina. On this account it frequently follows that an exact examination of the fundus cannot be made in the Mongolian.

(4) The macula appears blackish and opaque; the yellow spot seems darker in the Mongolian than in the Caucasian. In embolus of the central artery the so-called "cherry-red spot" has been found to be blackish.

(5) The halo surrounding the papilla in glaucoma appears usually dark in color, and is plainly seen with the inverted image. With the upright image and higher magnification, dark-brown pigment is seen to be scattered about.

(6) The pigment formation after choroiditis is completely black.

#### A CONTRIBUTION TO KERATOSCOPY.<sup>22</sup>

Uhthoff has devised an ingenious keratoscope, which in a series of cases he has found both practical and useful. In appearance it resembles Schweigger's hand perimeter, with a quadrant whose radius of curvature is fifteen centimetres. Upon the concave surface of the quadrant there is a system of white and black parallel lines, of equal width and so arranged that the white lines form the upper and lower margins. It is used similarly to Placido's disk, that is, the observer faces the light and sees the reflection of the lines upon the patient's cornea; and by the behavior of these lines anomalies in curvature and differences in level of the cornea can easily be detected.

With this instrument it is possible, in the horizontal meridian, to obtain a keratoscopic figure by which comparison of different parts of the entire cornea can be made in this meridian. This is also possible in slight deviations from the horizontal; but as a vertical position is approached, a limitation is noticed, which is due to the upper margin of the orbit. In order to examine the upper or lower parts of the cornea it will be necessary for the patient to look either up or down. In the normal cornea the white lines are noticed as parallel on a black background; in central keratoconus, as converging and becoming attenuated; in central transparent flattening of the cornea, as diverging at the centre, forming a sort of spindle, and of greater breadth. The different corneal complications which may obtain can thus give rise to an infinite variety in the corneal images.

#### EUCAIN IN OPHTHALMOLOGY.<sup>23</sup>

Under the name of eucain, which is a synthetic product resembling cocaine in its formulary, a new anesthetic has recently come into use, which is said to be cheaper than cocaine, less poisonous and without its after-effects. Vinci reports favorably concerning it. Richard Vollert carried on his experiments with the new drug at Professor Leber's clinic in Heidelberg. It is soluble in water, as the hydrochlorate; remains unchanged by boiling, and is with difficulty soluble in a one-fifth-per-cent. sublimate solution. A five-per-cent. solution of cocaine instilled for purposes of operation causes immediately a slight smarting sen-

<sup>22</sup> Kl. Monatsbl. f. Augenheilkunde, July, 1896.

<sup>23</sup> Münch. med. Woch., 1896, No. 22; reviewed in Centralblatt f. prakt. Augenheilkunde, August, 1896.



sation, which lasts perhaps one minute. Five-per-cent. eucaïn possesses this quality in a much greater degree, which continues as actual pain with lachrymation and symptoms of irritation for from one to two minutes. The irritation occurs by each new instillation even if a one per cent. solution is used. The anesthesia of the cornea and conjunctiva occurs promptly after two or three minutes, is complete, and continues for from eight to twelve minutes. Tension of the globe is about the same as with cocaine.

Contrary to the statements of Vinci, there occurs, after eucaïn as well as after cocaine instillation, mydriasis, especially when freely used as during operations, and a limitation in the range of the accommodation. Manometric measurements show, as is the case with cocaine, after one to one and a half millimetres of rise, a diminution of pressure to from three to five millimetres.

Repeated and carefully carried out experiments upon animals show that the corneal epithelium is affected to a much greater degree than by cocaine. The advantage of the slight degree of mydriasis and disturbance of the accommodation suggests its use for obtaining a single anesthesia. On the other hand, the pain and symptoms of irritation, the noticeable injection of the eye, together with the great damage done to the epithelium when compared with cocaine, makes the author think that eucaïn will find no place in ophthalmology, much less displace cocaine. Hirschberg, who has used it when removing foreign bodies embedded in the cornea, has finally discarded it.

#### A QUICK METHOD OF DETECTING MALINGERING.<sup>24</sup>

Helmhold not infrequently meets with patients who pretend that there has been a considerable diminution in their visual acuteness, and adhere to their statements with remarkable persistency. Among the many methods in use to detect false statements in this respect the following is to be recommended as being rapid and certain. Hang at the usual distance of five or six metres a testing-card so constructed that it contains the test-types as they are, and as they appear when the result of reflection from a mirror. After correcting the errors of refraction, if there are any, obtain the best vision possible in the usual way; then have the patient turn quickly about so that he will face a mirror at one-half the distance. If he is malingering he will probably read much smaller letters in that part of the chart where they were printed as if the result of being reflected, but which to him now appear as natural though at twice the distance.

#### THE EXTRACTION OF THE TRANSPARENT LENS IN PROGRESSIVE MYOPIA OF HIGH DEGREE AND IN RETINAL SEPARATION.<sup>25</sup>

Vacher, in a communication addressed to the French Society of Ophthalmology, at the annual meeting of 1896, stated that the extraction of the transparent lens in high myopia had been the cause of remarkable effort on the part of ophthalmologists, and the operation had now become definitely enrolled as a part of ophthalmic practice, but that it was not generally known that, instead of being of recent date, it was frequently done by Desmonceaux, a French oculist, as early as 1776, to whom the honor belongs rather than to Weber or Fukala, and who showed its advantages

in myopes exceeding 25 or 30 dioptries. The benefit derived from the operation continues, even though there may still remain 12 dioptries of myopia; for Dr. Eperon, of Lausanne, in a very remarkable article, has demonstrated that a myope of 20 dioptries becomes emmetropic, and that one of 30 dioptries finally has only about three dioptries; and observations absolutely confirm Eperon in his statements. Vacher has also noticed the shortening of the ocular axis in the operated eye and the increase of the myopia in the other. Among others who have confirmed this is Pflüger, of Berne. It is affirmed that the extraction of the crystalline exerts a prophylactic action upon a separating retina.

In conclusion he states:

(1) The operation of Desmonceaux is delicate, and should only be undertaken with great prudence.

(2) Rapidly progressing myopia between 12 and 16 dioptries can be operated upon from twelve years of age, if there is a staphyloma, and if the number of dioptries of myopia exceeds the number of years of the patient.

(3) It is only necessary to operate on the eye most affected, for the second extraction could take place later if the myopia continued to increase.

(4) After thirty years myopes of more than 15 dioptries are especially prone to separation of the retina, and therefore it is well not to hesitate.

(5) The extraction of the lens as a cure of high myopia ought to be called the operation of Desmonceaux.

Abadie believes a positive indication for extraction of the transparent lens in high myopia to be progressive tendencies with a central chorio-retinitis. In this class of cases there is no other method of treatment to stay this process of disorganization.

Chibret performs this operation as follows: he first makes a dissection with a cystotome; the wound quickly closes, and the lens becomes opaque in four days. He then extracts through a linear incision of four millimetres making use of his own aspiration syringe. He claims to have first tabulated in dioptries the reduction in length of the antero-posterior axis after the operation. The diminution in the axis corresponds to a diminution of tension of the globe, which results in arresting the myopia and the alteration in the fundus.

Galezowski would only extract when the myopia exceeds 15 dioptries, when the lens is becoming opaque, or when there is a chorio-retinitis.

## New Instruments.

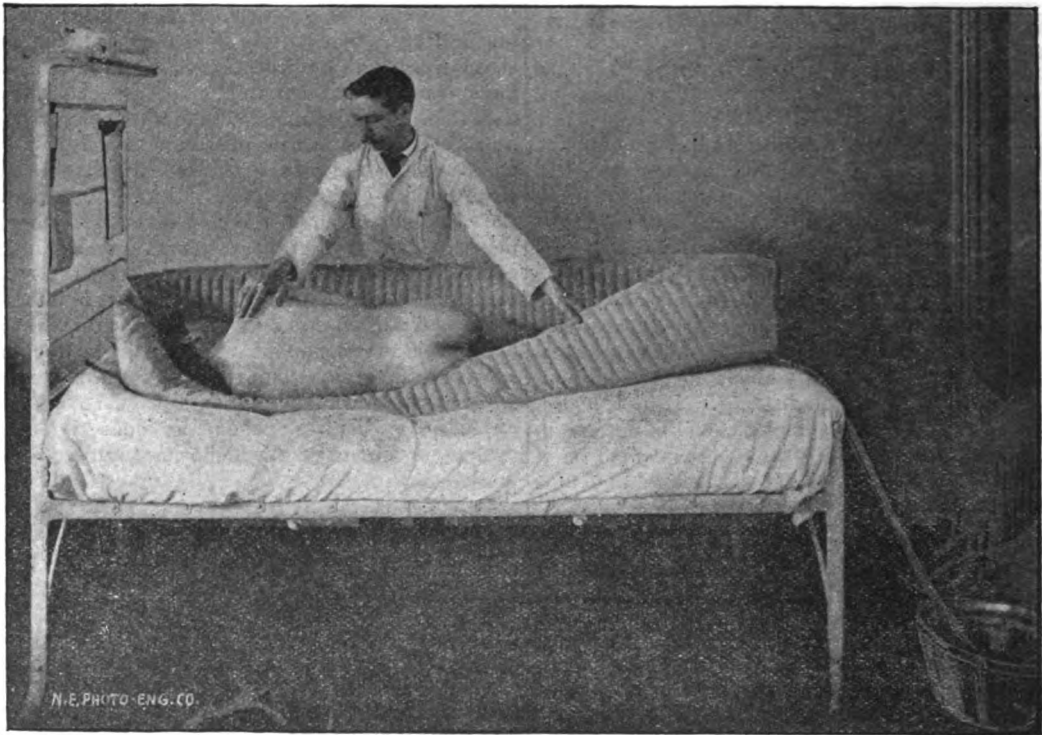
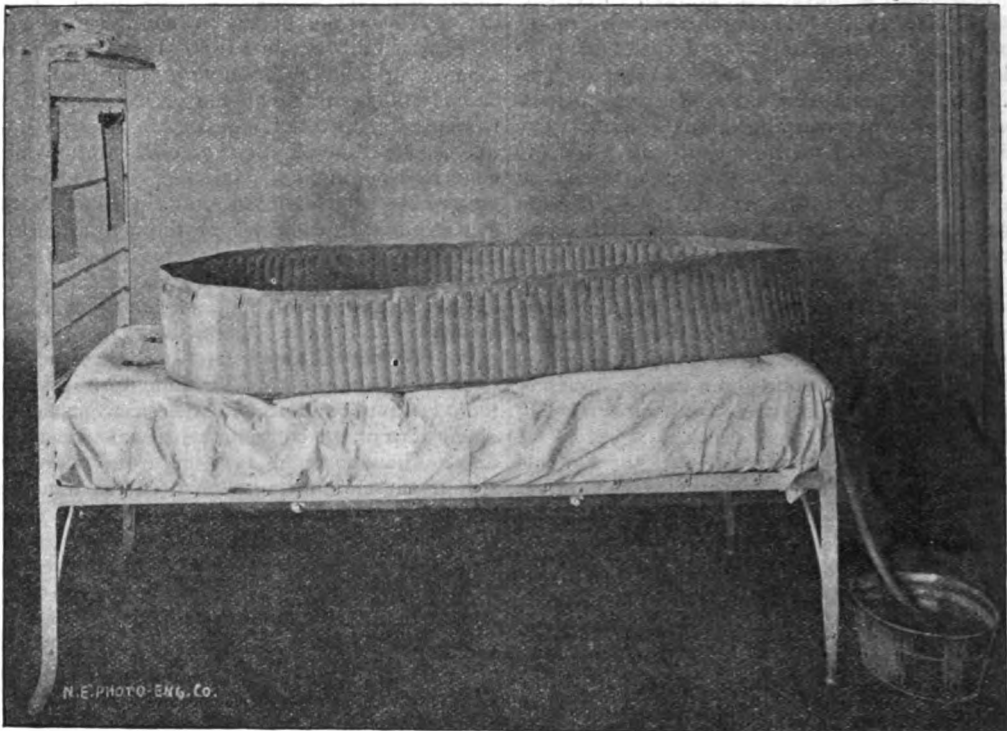
### A BED BATH-TUB FOR FEVER PATIENTS.

BY CHARLES W. TOWNSEND, M.D.

THE advantage of general cold baths in typhoid fever is well recognized. Brand's later statistics give a mortality of only one per cent. in 1,223 cases. The Brand system is, however, inconvenient and expensive. Two nurses are needed to lift the patient into the bath-tub; the portable bath-tub itself is difficult to manage and expensive; and lastly there is often a strong prejudice in the mind of the patient or his family against removal from a bed to a tub during illness. To avoid these difficulties and expenses the sponge bath in bed is generally substituted both in

<sup>24</sup> Kl. Monatsbl. f. Augenheilkunde, June, 1896.

<sup>25</sup> Rev. Générale d'Ophthal., June, 1896.



private and hospital practice, with far less satisfactory results.

The bed bath-tub figured here combines the advantage of the full Brand system with the convenience of the sponge-bath method. It avoids the trouble and expense of two nurses and the fatigue to the patient of being lifted into a tub.

The bed bath is oval in shape, six feet long by two feet broad, with sides a foot high. It weighs about twenty pounds, and can be rolled up into a small space.

The bottom is made of strong rubber sheeting, the sides are flat ribbed pneumatic tubes about two inches thick when inflated and twelve inches high. The

inflation is done by a bicycle pump, each side being inflated separately. By depressing one side as shown in the photograph (No. 2) the patient can be rolled into the tub as easily as onto a sheet. The water is poured in from pails or better still a tap, and is drawn off through a large pipe attached to the bath. The patient is then rolled out over the depressed side and the tub removed. The sides can be kept inflated, it not being necessary to deflate one side for each bath, as it is found that the patient can easily be rolled over the inflated side, when folded down.

This tub was made under my direction by the Davidson Rubber Company, for the Massachusetts General Hospital, and has been in continuous use this summer and autumn in the services of Drs. Cutler and Shattuck, to whom I am indebted for the opportunity to test the tub. It has also been used under Drs. J. J. Minot and Vickery while substituting.

The effect in reducing temperature in the typhoid patients has been marked; the patients themselves have found the bath comfortable, and lastly — a very practical evidence of the tub's value — the ward-tenders and nurses are unanimous in its praise.

## Reports of Societies.

### BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. G. MUMFORD, M.D., SECRETARY.

REGULAR Meeting, Monday, May 18, 1896, Dr. C. J. BLAKE in the chair.

DR. W. H. BAKER reported a case of

OVARIAN CYST WITH UNUSUALLY THICK WALLS.<sup>1</sup>

DR. MALCOLM STORER read a paper on

THE TRAUMATIC RUPTURE OF OVARIAN TUMORS, WITH THE REPORT OF A CASE.<sup>2</sup>

DR. HOMANS: I have not looked up all my cases. I will try and remember those cases of rupture I can think of. The first one I remember occurred exactly as this one was described. A very enthusiastic assistant making a very thorough examination bimanually caused the tumor to entirely disappear. I did not operate at once. There was no shock; there seemed to be no particular reason for operating. The woman declined to be operated upon later when the cyst refilled. I had news of her for ten years, during which time the cyst had filled six or eight times to the size of a cocoanut, and then burst and refilled.

Another case was a spontaneous rupture. I examined a lady in a distant city, I used my aspirator, and I have since wondered whether the aspirator was not plugged. I aspirated, and could get no fluid. About three months later, one night when this lady was getting into bed, she was suddenly seized with pain, fell and died, and the autopsy revealed a ruptured ovarian cyst.

The next one I remember was a case where I was operating, and I had one of those aspirators with two arrows indicating the direction of the current, and the gentleman managing it reversed the end, and blew up the cyst until there was an explosion, and the cyst

burst inside the woman. I operated the next day and I found considerable air in the peritoneal cavity, but no fluid. This rupture caused no trouble, and the woman recovered rapidly.

Another case was that of a woman who ruptured her cyst by falling over a barrel. Her abdomen filled up again; I saw her five or six months afterwards and operated, and she got well.

Another case was that of a lady at the South End. I found a cyst, made all my arrangements to operate and the lady came to my office, I examined her, and the cyst had disappeared. I have never seen her since.

There is a class of tumors often described as being ruptured cysts, which I think may be ruptured by the operator at the time of operation. It is where the contents are myxomatous or cancerous, almost like glue, or perhaps of the consistency of blanc-mange or vaseline. These cysts are very large, the enveloping wall is thin, the mere incision seems sufficient to tear away this covering, and you find inside a lot of this jelly substance, and you say that it is a ruptured cyst; and it may have been. It is difficult to get the thing out. Some of them return as cancer, and some of them get along very well afterward. As a general rule, they burst and run all over the abdominal organs. They are apt to become cancer; and for those cases I always carry a scoop to scoop out this thick gelatinous stuff. There is considerable hemorrhage from the torn tumor. Others I have seen in which I supposed the rupture was spontaneous, where, when I opened the abdomen, I found more or less cyst fluid about; but I do not know that I ever ascertained the rent through which the fluid came. All of the cases I have seen have recovered except one. A surgeon ought to be careful about bimanual examination of these cysts, and particularly as to whom you ask to examine. Some men seem to think they ascertain more by using a great deal of force.

I think Dr. Storer pursued a very wise course in his case. In regard to the phantom tumors, they are generally so large that when the patient is etherized the abdomen collapses. I should say it would be a very good rule to make, to have every patient you are going to have examined in the hospital prepared for laparotomy, as something of this kind may occur if you are going to have her examined by everybody.

DR. BURREAGE: The ground has been so thoroughly gone over that I have very little to add. I should like however, to emphasize the importance of care in making bimanual examinations. I have seen two cases of rupture — one a simple ovarian cyst, another an encysted peritonitis — due to overzeal on the part of the examining students. I was about operating on them both, and so had an opportunity to verify the condition. I have found, as Dr. Homans says, that men use too much strength. As they find they do not feel very much they use an increasing amount of force, and I think therein lies a very considerable danger; so I am accustomed to warn them, but the advice is not always effective. I have several times taken the histories of cases where there were evidences of cysts which apparently had burst and filled again. Undoubtedly a great many small cysts of the ovary, the size of a marble or larger, are ruptured in the course of ether examinations. It should always be kept in mind that the tactile sense is blunted by

<sup>1</sup> See page 522 of the Journal.

<sup>2</sup> See page 518 of the Journal.

forcible manipulation. More can be felt by gentle than by forcible examination.

In cases of extra-uterine pregnancy the amount of blood found free in the peritoneal cavity at the time of operation has something to do with the amount of examination that has been used beforehand, because the effused blood is at first often walled off by thin adhesions and clotted blood. Dr. Storer is to be congratulated on the brilliant result in his case. He was justified in going ahead as he did and operating; and I should say it would be wiser to operate at once in every case of traumatic rupture of an ovarian cyst.

DR. M. H. RICHARDSON: I did not hear the details of this case. The statistics and the conclusions given by the writer are extremely interesting. The danger of rupturing an ovarian cyst by the pressure and manipulations of an examination is certainly great. I have known several cases. In one instance a large ovarian tumor disappeared, apparently under a very thorough examination made by a colleague. The patient was apparently cured and went home well from the Carney Hospital. Some years later the patient came to me again, presenting the symptoms of a large ovarian tumor. I removed this at the Massachusetts General Hospital, and the patient has been perfectly well ever since. She has been able to do the work of a nurse.

Spontaneous rupture of ovarian cysts presents symptoms which indicate with more or less clearness the nature of the accident. I have operated on several such cases. They, as a rule, present the symptoms of acute peritoneal invasion, with those of sepsis. The pain is sudden and acute, and collapse at times excessive. In other cases the symptoms are unimportant. I recall one case in which I found the abdomen filled with the turbid contents of an unilocular cyst. The fluid had the appearance of pus, but microscopic examination showed it not to be pus. The peritoneum was reddened, but not in a state of acute sepsis. I removed the tumor without difficulty. The fluid had escaped through a pin-hole opening in it. The patient did well for three or four days, when she died suddenly of pulmonary embolism.

In a third case I found a small multilocular cyst floating in the contents that had escaped from one of the larger cysts. This patient made a good recovery.

I am surprised to hear the large mortality in the cases mentioned by Dr. Conant, for the extravasation of ovarian contents seems, as a rule, to be unattended by serious results. Few, if any, large multilocular cysts can be removed without rupture of one or more of the larger cysts, and you cannot but have, therefore, in such cases, an extensive contamination of the abdominal contents. Yet they seem to do perfectly well. Cases of ovarian cysts in which the contents are in the beginning septic necessarily produce a more or less extensive general infection. That the mortality in such cases should be great, is not surprising. In these cases, as in extra-uterine pregnancy, the trouble is that the fatal process gets under such headway that it cannot be restrained by operative interference.

With reference to the rupture of ovarian cysts and the rupture of tubal pregnancies, it has always seemed to me extraordinary that a general peritonitis should often result in such cases. How there can be in a tubal pregnancy anything to cause peritonitis, I cannot imagine. I can see nothing in an ovarian cyst to produce such a result, unless the contiguity of these

abnormal substances to the intestine so alters the intestinal walls that micro-organisms make their way through. It is well known that any process which weakens or alters the peritoneal or the intestinal wall, may permit extravasation through it, especially of the colon bacillus. Possibly in some of the forms of ovarian tumor under discussion the invasion may take place in this way; for it is certainly true that many forms of peritoneal invasion take place which cannot be due to any condition existing in the cyst itself—which must come from the intestine or from the circulation. The similarity between ruptured tubal pregnancy and ruptured ovarian cyst is extraordinary; and were it not for the presence of a large tumor in the latter, I think it would be impossible in all cases to make a diagnosis between these conditions. Between cases of ruptured tubal pregnancy with trifling hemorrhage—a ruptured ovarian tumor of small size with a comparatively trivial escape of fluid—between these cases and ovarian tumor with a twisted pedicle it is at times impossible to distinguish. Of ovarian tumors with twisted pedicles I have seen a number of cases. The majority of them have done remarkably well.

I have listened with great interest and respect to Dr. Homans's remarks on this subject, for it seems to me that his observations are of the greatest possible value. What he has said of the rupture of the cyst and the frequency with which cases are followed by malignant disease is of great interest. I have seen several most distressing cases of this kind. From my comparatively limited observation it has seemed to me that malignant cysts of the ovary which are papillomatous—whether unilocular or multilocular—are very apt to become ruptured, owing to the extreme thinness of some portion of their walls. I have certainly seen, not infrequently, cases in which some of the cysts would rupture under the slightest manipulation. If a cyst is malignant, the escape of its contents may extensively inoculate the peritoneum with malignant disease. For this reason, if for no other, we should make every effort to avoid the rupture of tumors, especially those of possible malignancy.

In all instances in which sudden pain, with symptoms of shock, occurs in cases of abdominal tumor, our duty is immediately to explore. True, we occasionally make a mistaken diagnosis and perform a useless operation; yet it is a great deal easier to satisfy one's conscience after a successful though useless exploration, which the indications seemed to demand, than after an autopsy which shows that the patient's life might easily have been saved.

With reference to the preparation of the skin for operation in abdominal emergencies, we are in the habit of using the same solutions for the field of operation that we use for the hands, and there seems to be no reason why they should not be quite as efficient.

DR. BAKER: I have been very much interested in Dr. Storer's paper, particularly in the thoroughness with which he has gone into the literature of the subject, and also in the courage he showed in the immediate operation. Of the number of cases where I have seen this accident, there are four which come prominently to my mind. First, I recall the rupture of an ovarian cyst in the City Hospital when I was interne, which had been examined and diagnosticated. There was good recovery of the patient, and some months afterwards there had been no recurrence of it. There were two other cases of spontaneous rupture of the

cyst, one into the rectum and one reported to this Society by Dr. Hare the past year, where there was rupture into the bladder; and still another case of dermoid which ruptured into the peritoneal cavity, with the death of the patient. Nearly akin to these cases is rupture of distended tubes. There may be some cases where this may be done purposely. I recall a case where many years ago the wife of a physician upon whom Dr. Homans had most successfully operated and had removed a hydrosalpinx of the right side and who some year or two afterwards consulted me for pain and discomfort in the left side, and after learning from Dr. Homans the nature of the trouble that she had in the right side and after examining under either which I supposed I was doing carefully, the distended tube burst. I felt it give way at once under the examination. She was kept very quiet, and there was no disturbance after the examination, which again verified to my mind the character of the trouble upon the left side being similar to that upon the right. She came to me nine months afterwards with the express purpose of having me rupture this tube again, as it had begun to cause her trouble. I put her on the table and did so. She felt greatly relieved afterwards. I think she came to me about once in six months to a year for three or four times for the rupture of this tube, which I did and always with great relief to her. The last time it was ruptured was some five years ago; and what the course of the thing has been since I am unable to say, although I have heard indirectly that she has remained in good health since that time, no operation and seemingly no necessity for any further rupturing of the tube. I should not altogether advise this procedure unless one knew pretty well the contents of the cyst.

DR. STORER: It seems to me that to smear the contents over the intestine is very different from having the cyst rupture and leave a large amount free. The contents of a dermoid can be smeared around almost with impunity, yet I think without exception every case of ruptured dermoid gave more or less severe peritonitis. Dr. Burrage spoke of the roughness with which students examine abdominal cases. Since this case it has been my custom to map out the tumor myself and then with the hand upon the abdomen separate the fingers and allow the student to put his fingers between mine to get an idea of where the tumor is and then let him examine at greater length.

DR. HOWARD A. LOTHROP read a paper on  
TETANY, WITH A REPORT OF CASES.\*

DR. J. J. PUTNAM: I am very glad to have heard the report of Dr. Lothrop's interesting cases. I agree with him that cases of tetany are rare in America. I have seen only three or four instances, as far as I can remember, of the carpopedal contraction variety of tetany in children, and one, or possibly two in adults. There is very little to be added to what has been said. Dr. Taylor called my attention to-day to a very recent summary by Dr. Pfeiffer, but the conclusions at which he arrives are not more definite than those mentioned. Dr. Griffith's paper summarizes the cases in this country. Although there does seem to be a connection between rickets and the form of typical contraction of the hands and feet, nevertheless the negro population in the neighborhood of the Massachusetts General

Hospital gives rise to very few of these cases so far as I know.

As regards the cases which occur in connection with pregnancy, it is interesting to note that that is a period also in which myxedema has sometimes occurred, and the suggestion has been made that it is a time when disorders of the thyroid secretion may be likely to be present, and one would think that the cases of tetany might be explained in that way. I believe some investigations that have been made on the use of thyroid extract in the treatment of tetany, even when not due to the removal of the thyroid, indicate a certain amount of success for this treatment. Although one might be tempted to refer the cases which occur in pregnancy to a reflex cause, yet one should not for that reason assign the disease to that cause exclusively. It seems highly probable that we deal generally in neuroses with multiple causes and that anything which lowers the vitality of the whole or certain sections of the body allows causes that would not otherwise be operative to have an effect.

DR. G. L. WALTON: Tetany in itself has always seemed to me rather a symptom than a disease; in fact, it probably appears in totally different conditions of varying pathology. I dare say that some of the infantile cases might as well have been classed as a peculiar variety of infantile spasm, while others, complicated with pregnancy and lactation, as well as occurring in otherwise healthy young women, have included cases which might have been classified under hysterical-contraction. The type in which this peculiar form of spasm accompanies severe gastro-intestinal disturbance probably represents a toxic disorder, and the same is doubtless true of the cases connected with thyroidectomy. It seems futile to look for a common pathology for all cases of tetany, and yet their clinical similarity warrants placing them in a class by themselves. We should recognize the fact, however, that this term, like the term neuralgia, represents a symptom rather than a disease.

The diagnosis between tetany and hysteria has always seemed to me a little arbitrary. In point of fact, hysterical-contraction may be bilateral on the one hand and tetany may be unilateral on the other. Again, Trousseau's symptom has been observed time and again in Charcot's clinic of hysteria, in which disturbance spasm may be brought on, not only by pressure upon the nerve, but by the application of the faradic current or even the tuning-fork.

A word concerning the electrical changes said to be found in tetany. Erb has been quoted as having found a qualitative alteration in the electrical reaction, that is, that the anode opening is greater than the cathode closure. In the original I find no such statement, but merely a description of increased irritability as follows: "By the faradic examination the nerves show a reaction to an extraordinarily slight current; by the galvanic examination cathode closure appears very early, also the anode opening; very soon cathode-closure tetanus appears, and also anode-closure tetanus, and — what is especially important and characteristic — there is found a marked anode-opening tetanus. Chvostek has even in two cases observed a cathode-opening tetanus."

The prognosis of tetanus is naturally as varied as its pathology, ranging all the way from lack of danger to fatality. In the cases bearing the latter prognosis the serious results are due, not, to the symptom

\* See page 513 of the Journal.

tetany, but to the serious underlying pathological condition.

DR. TAYLOR: A matter of considerable scientific, rather than practical interest, to which Dr. Lothrop has referred, is that of the identity of the disease; whether or not we have to do with a disease entity or simply with a symptom-complex or a single symptom which may occur in many diseases. This is an important point not only with this condition, but with many others, as, for example, with acute ascending spinal paralysis. If the disease, so-called, or symptom-complex, occurs in a variety of conditions, it seems to me we are scarcely justified in terming such a symptom-complex or single symptom a disease until we find underlying it some distinct and constant pathological lesion. An analysis of tetany and of the symptoms of tetany which have been designated by various men are ultimately referable in great measure to a single symptom, namely, nerve or muscle excitability. It seems more scientific and reasonable to suppose that the nervous system may be placed in such a condition of excitability by a variety of causes which manifest themselves as so-called tetany, but to regard that single symptom as a distinct disease is as yet going beyond our right. A condition which is perhaps closely allied is Thompson's disease, characterized by peculiar muscular excitability, and I think worthy of being brought out as possibly another manifestation of hyperexcitability of the nervous system, of unknown etiology.

DR. P. C. KNAPP: I think that the evidence from the various studies which have been made goes far towards showing that the one condition upon which tetany depends is a toxic condition of some sort. Whether that toxic condition is due to a special poison, or whether tetany is merely a reaction of the nervous system to different poisons is another question. There is, however, I think, one thing which is rather strongly in favor of tetany being due to a single cause and that is its rather peculiar distribution; the fact which Dr. Lothrop brought out, that whereas it is a comparatively common thing in Vienna and in Prague, in Berlin and in Leipzig it is rare and in this country it is very rare. I recall hardly a case at the City Hospital where the suspicion of tetany has arisen. There are occasional cases presenting some symptoms suggesting tetany, but without the definite diagnostic features of Trousseau's phenomenon or of the increased electrical excitability, so that my own feeling is that it is more probably a disease due to a special intoxication rather than a reaction of the nervous system to various forms of intoxication. If the latter were the case, it seems to me we should see tetany more frequently than we do, because there are very many forms of intoxication that are as common in this country as in Europe; and if it were merely a symptom of intoxication such as occurs in the puerperal state, or in connection with thyroid disease, I do not see why we should not see tetany as frequently here as elsewhere.

DR. ROTCH: In regard to the occurrence of the disease in the children's clinics it is very rare. I have seen only perhaps half-a-dozen cases in the large children's clinics in various parts of Boston.

DR. PUTNAM: My own belief is that a large number of neuroses are a sort of caricature of physiological or quasi-physiological states, and if we can find in a variety of conditions that the nervous system reacts in a certain way, even if the causes are numerous, it seems

to me it is distinctly of value to group together the conditions under which this peculiar reaction occurs. Whether we call these conditions a disease or not is more or less immaterial.

DR. KNAPP: If we followed Dr. Taylor's suggestion, we should exclude a good many affections which are distinctly recognized and classed as diseases at the present day. We should rule out hysteria and paranoia. I do not think it is fair to class contractions of certain groups of muscles similar to that of tetany occurring in such affections as cerebro-spinal meningitis or structural changes in the central nervous system, as tetany; but where the contractions are associated with a distinct hyper-excitability, Trousseau's phenomenon or increased electrical excitability, it is a different thing. Of course, only cases presenting all those phenomena should be classed as tetany.

#### A NEW FORM OF PROTRACTOR.

DR. C. H. WILLIAMS presented a new form of protractor which he had devised to measure the angles at which cylindrical lenses are set in the frame, and also to determine whether cylindrical or spherical lenses are properly centred in their frames when finished. It is important to determine whether such lenses are properly centred, for, if the decentring is considerable, you get a prismatic effect that may be quite unpleasant, and in cheap spectacles or glasses this is one of the commonest defects.

### Recent Literature.

*The Medical News Visiting List for 1897.* Weekly (dated, for 30 patients); Monthly (undated, for 120 patients per month); Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60-patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil and rubber. Philadelphia and New York: Lea Brothers & Co.

This well-known Visiting List for 1897 has been revised and brought up to date. The text portion (32 pages) contains the most useful data for the physician and surgeon, including an alphabetical table of diseases, with the most approved remedies, and a table of doses. It also contains sections on examination of urine, artificial respiration (Sylvester's method), incompatibles, poisons and antidotes, diagnostic table of eruptive fevers, and the ligation of arteries. The classified blanks (160 pages) are arranged to hold records of all kinds of professional work, with memoranda and accounts. The selection of material in the text portion and the arrangement of the record blanks are the result of twelve years of experience and special study. Equal care has been bestowed upon the mechanical execution of the book, and in quality of paper and in strength and beauty of binding nothing seems to be left wanting. When desired, a ready reference thumb-letter index is furnished at an extra cost of twenty-five cents. This is an excellent Visiting List.

LEPERS IN ICELAND. — Iceland with a population of 75,000, has 400 lepers.



THE BOSTON

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## THE UNION OF NEUROLOGY AND PSYCHIATRY.

THE development of specialties in medicine has naturally given rise to many jests concerning specialists for the great toe, the right ear, or the middle turbinated bone; but it is a serious and unfortunate manifestation of specialism which has set apart certain diseases of the brain in a class by themselves so exclusive that they are never mentioned in the text-books of internal medicine and rarely in treatises on diseases of the brain itself. Theological and metaphysical considerations for a long time tended to separate diseases of the mind from other diseases of the brain, and the distinction still holds, although it leads to various absurdities. The text-books of medicine give, for example, a reasonable space to the consideration of hysteria—a disease purely psychical—but until recently, they have said nothing of parietic dementia, a degenerative disease of the whole central nervous system. The text-books on insanity, however, give a most inadequate account of hysteria. Both the text-books on mental disease and those on nervous disease thus become defective; the former describe the more pronounced mental symptoms of tumor or hemorrhage under the heading of insanity from structural disease, and fail to note the other more important symptoms; the latter neglect the mental symptoms of various nervous diseases and furnish no proper diagnostic criteria between these and the so-called mental diseases. In practice, however, the artificiality of this distinction becomes evident. We cannot deal with neurasthenia, tabes, hysteria and multiple neuritis without considering also *folie du doute*, parietic dementia, melancholia and amentia; if we attempt to do so our diagnosis, prognosis and treatment are all at fault.

That this distinction between diseases of the mind and diseases of the brain has worked harm both to neurology and to psychiatry is only too plain. The scope of neurology on the one hand, has been confined,

and, so far as it neglected the study of mental diseases, its comprehension of the problems of the study of the nervous system has been defective; while psychiatry, neglecting the thorough study of neurology as the only scientific basis for the study of the higher cerebral functions, has made less rapid progress. Alienists and neurologists have kept themselves apart, to the harm of both, and in times past there have even been mutual hostility and criticism instead of good will.

At the recent Congress of Alienists and Neurologists of France and French-speaking countries held at Nancy, Professor Pitres, of Bordeaux, in his opening address<sup>1</sup> made an urgent plea for an alliance between psychiatry and neurology. "The division into two groups," said he, "of the army of workers engaged in the study of mental and nervous diseases is wholly artificial. It is based on no general idea. It is opposed to the very nature of things. Scientifically it is irrational. Practically it would result, if it were rigidly maintained, in dividing the study of diseases which are one and which can be well known only by observing all their manifestations in their complete evolution." He dwelt upon the fact that most mental diseases are observed in asylums only in their pronounced and complicated forms, while the milder and simpler forms are seen only in general practice and in hospitals; other mental diseases, such as transitory toxic or febrile, delirium and the obsessions are rarely if ever found in asylum practice; while a large number of diseases, such as tabes, general paralysis and multiple sclerosis, may or may not be attended with sufficient mental symptoms to require seclusion, so that, in order fully to comprehend them, the experience of alienists and neurologists must be united. "For these reasons," he continues, "it is indispensable to complete, each by the other, the researches of the neurologists by those of the alienists. They are absolutely united. They march side by side. They have the same objects, the same tendencies, the same methods, the same ends. They ought not to be separated."

This is so true that great discoveries in one field have never failed to extend their influence into the other. The sciences are apt to progress much more by their influence upon other sciences than by discoveries in their own domain. The principles of degenerative heredity were studied by Morel in mental diseases and applied by him solely to the etiology of psychopathies and neuroses, but they have been extended to all nervous diseases, and are applicable to many morbid states. On the other hand, the laboratory work in bacteriology was at first thought applicable only to general febrile and epidemic diseases. Later, rabies, tetanus and other affections were found to be due to infectious causes, and, finally, the influence of infection in the etiology of nervous and mental diseases has been found to be widespread, as the discussion at the Washington Congress in 1894 showed.

"The moral of this," says Pitres, "is that we should not shut ourselves up in too narrow or too exclusive

<sup>1</sup> Archives de Neurologie, September, 1896.



specialization, and that we should do all we can to enlarge our horizon. A neurologist would have insufficient culture were he not familiar with the progress of psychiatry, and an alienist would be deprived of precious elements of information if he did not follow with an attentive and curious eye the researches made in the domain of neurology."

It would, indeed, be conducive to the highest development both of psychiatry and neurology if the teachings of this address could bear fruit not only in France but throughout the world. If those in charge of asylums were always men skilled in neurology as a foundation for their study of psychiatry, we should be spared much of the inefficient, unscientific work which has too often exposed the asylum superintendent to harsh but deserved criticism; while, on the other hand, if the neurologist were thoroughly versed in a knowledge of the so-called mental diseases, his understanding and treatment of the other diseases of the nervous system would be vastly enriched and made more profitable to his patients.

#### THE SERUM TEST AS A METHOD OF DIAGNOSIS FOR TYPHOID FEVER.

FURTHER experience with Widal's serum test in typhoid fever tends to confirm its value as a useful aid to diagnosis.

ON November 9th, the New York Board of Health issued a circular to physicians inviting them to cooperate with the department in conducting experiments which will assist in the diagnosis of early or obscure cases of this disease. Dr. Hermann Biggs, director of the Health Board's bacteriological laboratory, reported to the board recently that previous investigations showed that serum from the blood of typhoid patients has the power of arresting the active movement of the bacilli, and of producing peculiar and characteristic clumping of these organisms. It has been shown, he considers, that this reaction occurs frequently very early in the course of the disease, at a time when the physician by ordinary methods cannot determine certainly whether the patient is suffering from typhoid or some other form of fever. Also, that it is found throughout the course of the disease, and very often for a considerable period after complete recovery. With the sanction of the board, Dr. Biggs has arranged to make a daily collection of slides furnished by physicians from the druggists with whom diphtheria culture-tubes are kept, and to promptly investigate and report upon them. It is believed that the scheme will be of material assistance to practitioners in enabling them to promptly care for typhoid cases in the incipient stages.

At the Boston City Hospital the test has been made in about fifty cases of undoubted typhoid, of doubtful typhoid, and of a few other diseases. In almost all the response has accorded with the diagnosis as previously made, or reached later with a clearer view of the conditions.

Dr. C. L. Greene, of St. Paul, Minn., reports the

results of the application of the test in twenty-five cases, eleven of typhoid and thirteen of other diseases; with positive results in all of the first class, and negative results in all of the second class.<sup>1</sup>

The reaction has been observed as early as what was supposed to be the end of the first week and as late as the seventh week.

To determine the true value of the test as a means of diagnosis further observations are desirable.

#### MEDICAL NOTES.

A PROFESSOR OF MASSAGE. — A Chair of Massage has been established in the University of Berlin with Dr. Zabloudovsky as professor.

PROFESSOR LESSER SUCCEEDS PROFESSOR LEWIN. — Professor Edmund Lesser, of Berne, has been appointed Director of the Charité Clinic for Dermatology and Syphilis, as successor to the late Professor Lewin.

THE SEMI-CENTENNIAL OF ANESTHESIA. — The November number of the *Buffalo Medical Journal* is chiefly devoted to the exercises commemorative of the discovery of anesthesia held in the Alumni Hall of Buffalo University Medical College on October 16th. The exercises consisted of introductory remarks by James O. Putnam, Chancellor of the University; an able and interesting address entitled, "Remarks upon the History and Introduction of Anesthesia in Surgery," by Prof. Roswell Park; and brief addresses devoted chiefly to reminiscences of surgical practice before and in the early days of anesthesia, by Prof. E. M. Moore, Drs. C. C. Wyckoff and John Hauenstein. The hall in which the exercises were held was filled with an audience of physicians and their friends, who manifested deep interest in the event and its commemoration.

#### BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, November 18, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 124, scarlet fever 54, measles 56, typhoid fever 42:

DONATION TO A HOSPITAL. — The Trustees of the Elliot Hospital at Manchester, N. H., have received a gift of several thousand dollars for the erection of an operating building. The giver is unknown.

THE SUFFOLK DISTRICT MEDICAL SOCIETY. — At the stated meeting of the Suffolk District Medical Society held at No. 19 Boylston Place, on November 14th, the resignations of Dr. Smith as Secretary and Dr. Buckingham as Treasurer were presented and accepted. Dr. A. S. Knight was elected to fill the office of Treasurer, and Dr. John Dane that of Secretary. The following gentlemen were appointed Secretaries of Sections for the ensuing year: Section in Surgery, Dr. Paul Thorndike; Section in Clinical Medicine and Hygiene, Dr. E. W. Taylor; Section of

<sup>1</sup> Medical Record, November 14th, p. 699.

Obstetrics and Gynecology, Dr. C. H. Hare. A committee was chosen to nominate officers for the annual meeting, consisting of: Drs. J. C. Warren, G. W. Gay, F. W. Draper, G. H. Durgin and J. H. McCollom.

## NEW YORK.

**DEATH OF HENRY A. MOTT, PH.D.**—Henry A. Mott, Ph.D., a distinguished chemist, died, after a brief illness, on November 8th, at the age of forty-four. He was the youngest son of the late Henry A. Mott, and a grandson of Valentine Mott, the celebrated surgeon. He was frequently called in court trials as an expert, and was one of the witnesses in the recent case of Mrs. Fleming. He was formerly professor of chemistry in the New York Medical College, and for the past six years has given chemical lectures in the public schools of New York.

**THE EPITAPH OF AN EIGHTEENTH CENTURY PHYSICIAN.**—One of the oldest tombstones in a forgotten graveyard in New Jersey, where once stood a church known as St. Peter's of Topanemas, which has recently been visited by a writer in the *Evening Post*, is that of a physician, Dr. William Nichols. The inscription on it is as follows:

In Hope of a Joyful  
Resurrection.

Here Lieth Interred the Body  
of William Nichols for many  
years of this county of monmouth  
Practitioner in Physick and  
Chirurgery. A Gentleman of  
Great Experience and moderation  
in his Practise. He was born  
in the city of Dublin October  
the 23 Day Anno Domini 1685  
and died in Freehold in this  
County April the ninth Day one  
Thousand Seven Hundred and  
Forty Three in the Fifty Eight  
year of his Age.

Remember that thou also shalt Die.

**DEATH OF DR. BURCHARD.**—Dr. Thomas Her-  
ring Burchard died suddenly of cardiac disease at his  
home in New York on November 14th. He was the  
eldest son of the late Rev. Samuel D. Burchard, and  
was born in New York City, March 19, 1850. He  
was graduated from Bellevue Hospital Medical Col-  
lege in 1872. He served as house surgeon at Belle-  
vue Hospital, and was afterwards appointed demon-  
strator of anatomy at the Bellevue College. After  
serving for some time as attending surgeon to the  
New York Dispensary he was made a visiting surgeon  
at Charity Hospital, Blackwell's Island, a position  
which he held for many years. For two years he was  
also president of the Medical and Surgical Board of  
this hospital. Later he was appointed lecturer on  
Surgical Emergencies at Bellevue Hospital Medical  
College. Dr. Burchard was distinguished as a physi-  
cian, as well as a surgeon, and was a frequent con-  
tributor to the prominent medical journals. Person-  
ally, he was a man of the most attractive presence and  
genial disposition. He was widely popular in the pro-  
fession as well as with the general public, and his un-  
timely death will be deeply mourned by a very large

circle of devoted friends. He was twice married,  
and a widow and two children by his first wife survive  
him.

## Miscellany.

## A DIPLOMA FOR THIRTY-FIVE DOLLARS "ALL INCLUSIVE."

WE have received from a medical acquaintance in Boston a circular offering him and others a medical diploma "all inclusive," for the moderate fee of thirty-five dollars. We reproduce the text of this circular, and also the text of the charter of this diploma mill, which flourishes under the protection of the State of Wisconsin, though having its distributing office or bureau of sale in Chicago. We are glad to learn from the *Journal of the American Medical Association* that the Attorney-General of Wisconsin has filed a petition for the abrogation of the charter of this Wisconsin Eclectic Medical College. It would be well if that State, and other States also, were less careless in granting such charters.

"Always give your FULL ADDRESS every time you write, no matter how often it may be."

FRED. RUTLAND, M.D., Pres't. A. NEVE RUTLAND, M.D., Sec'y.  
CHARLES PODMORE, M.D., Treas.

Incorporated under the Laws of the State of Wisconsin.

WISCONSIN ECLECTIC MEDICAL COLLEGE,  
OF MILWAUKEE, WIS.

CORRESPONDENCE DEPARTMENT,  
1001 W. Congress St.

CHICAGO, ILLINOIS, Nov., 1896.

DEAR DOCTOR:—We notice your name in a Medical and Surgical Directory, but with a \* appended. This usually means (although not necessarily so) that the person so designated is not a graduate of a Medical School, and has no diploma. If, however, it should be that you are a graduate, and have a regular diploma, then we can but tender our most sincere apologies for troubling you on the matter. BUT; on the other hand, if you are not a graduate, and have no regular diploma, then the perusal of the enclosed prospectus cannot fail to be of the most primary importance and interest to you. We would also desire to draw attention to the fact, that to Practising Physicians our fees are much reduced from the regular rate. To this class our fees are \$35.00 all inclusive.

As proof of our legal standing and right to confer the degree of M.D., we can supply *Certified Copies* of our Charter at 25 cents each, simply covering the cost of certifying-officer's fee.

Trusting soon to hear from you, and standing ready to answer any or all questions you may wish to submit,

We are, Yours very sincerely,

WISCONSIN ECLECTIC MEDICAL COLLEGE,  
FRED. RUTLAND, PH.D., M.D.

## [THE SAME OFFER TO A PHARMACIST.]

CHICAGO, ILLINOIS, Nov., 1896.

DEAR SIR:—If you have any aspirations to a profession which runs side by side with that of Pharmacy, if you desire to become a physician and have the legal right to append M.D. to your name; then you are politely requested to carefully read and digest the contents of the inclosed prospectus.

The plan as outlined therein gives to the pharmacist an open door to the legitimate practice of medicine as an authorized physician. In these days when the pharmacist is required by law to be as highly educated, as well read, as well versed in the various branches of Medical Knowledge and to pass as rigid an examination (and in some States much more rigid) than is required of the physician; is there, we ask, any reason why the pharmacist should not avail himself of the opportunity (while he has it) to take yet another step on the ladder of life and become M.D.?

The average pharmacist's knowledge of *Materia Medica*, Therapeutics, Anatomy, Physiology, Science and Practice of Medicine, Obstetrics and Surgery is usually just as good as the average physician, indeed many much better, for there are thousands of practising physicians who never had a diploma, never was asked a question on the subject; while every pharmacist has been through the fires of inquisitorial examination.

The diplomas of the WISCONSIN ECLECTIC MEDICAL COLLEGE

are perfectly good in law, binding and valid, and the total fees are exceedingly moderate, \$35 00 all inclusive. We only ask your best thoughts on the matter. And in the meantime we shall be glad to hear from you and to explain any point or points not made quite clear by the prospectus, or any which may arise in your mind.

We are, Yours very sincerely,  
WISCONSIN ECLECTIC MEDICAL COLLEGE,  
FRED. RUTLAND, Ph.D., M.D.

#### UNITED STATES OF AMERICA.

#### THE STATE OF WISCONSIN, DEPARTMENT OF STATE.

To all to whom these presents shall come:

I, HENRY CASSON, Secretary of State of the State of Wisconsin, do hereby certify that there has been this day filed in this department an instrument in writing, purporting to be Articles of Association with a view of forming a corporation to be known as WISCONSIN ECLECTIC MEDICAL COLLEGE at Milwaukee without Capital Stock, the business and purpose of which shall be to conduct a medical college, etc., and verified as a true copy by the affidavit of Fred. Rutland, M.D., and Ann Neve Rutland, M.D., who appear in said instrument as two of the signers of said articles; Therefore the State of Wisconsin does hereby grant unto the said WISCONSIN ECLECTIC MEDICAL COLLEGE at Milwaukee the powers and privileges conferred by Chapter 86 of the Revised Statutes of the State of Wisconsin and all acts amendatory thereto, for the purposes above stated and in accordance with their said Articles of Association.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, at the Capitol in the City of Madison, the thirty-first day of December, in the year of our Lord one thousand eight hundred and ninety-five.  
[SEAL] HENRY CASSON,  
Secretary of State.

#### CHANGES IN MEDICAL JOURNALISM IN EDINBURGH.

THE *Edinburgh Medical Journal* has been bought by a new publisher, and as a result of this, it is said, Dr. Joseph Bell, who has ably conducted that journal for twenty-three years, has resigned, and the journal will have a new editor. Messrs. Oliver & Boyd, the late publishers, it is reported, effected the sale without notifying the editor or the two medical societies of which the journal has been the recognized organ.

It is perhaps due, in part at least, to this series of events that a new medical journal is to be published in Edinburgh, beginning in January, 1897, the prospectus of which has just appeared. It is to be called *The Scottish Medical and Surgical Journal*, and is to be edited by William Russell, M.D., F.R.C.P. Ed., Assistant Physician to the Royal Infirmary, Edinburgh. The journal will be under the direction of Professors Simpson and Annandale, of Edinburgh; Professors Stephenson and Hamilton, of Aberdeen; Drs. Joseph Bell, Clouston, John Wyllie and Underhill, of Edinburgh, and Dr. J. W. Miller, of Dundee. It will have correspondents in Glasgow, Aberdeen and Dundee, and a large staff of collaborators in all departments of practical and scientific medicine.

This journal is to be absolutely under the control of the profession and it is to be owned and managed by members of the profession who have subscribed the necessary capital. It will be issued monthly, and will consist of about 96 pages, octavo. The main object of the committee and promoters is the publication of a thoroughly representative Scottish Journal; any profits which may accrue will be devoted to enhancing its usefulness, and either enlarging it or reducing its price.

The old *Edinburgh Medical Journal* was built on the foundation of three preceding journals, one of which, the *Edinburgh Medical and Surgical Journal*, was started in 1805 and continued until 1855.

We should regret to learn that the best interests of the profession in Scotland are no longer in sympathy with the conduct and policy of so old an acquaintance as the *Edinburgh Journal*.

#### RÖNTGEN RAYS IN THE TREATMENT OF FRACTURES.

OBERST, of Halle,<sup>1</sup> has for several months examined every fracture in his hospital service by means of the Röntgen rays. He finds, as a result of his observations, that without anesthetizing the patient, or subjecting the broken limb to manipulation, it is possible to make an exact diagnosis of the position, nature, and direction of fractures, and of the amount of deformity. He, therefore, employs anesthesia only in cases where painful manipulations are necessary to correct faulty positions of the ends of the bones. He thus avoids that experience common to almost all surgeons, the etherization of cases with a negative result, and also the danger of fresh hemorrhage or laceration of tissues from stirring up the fractured ends.

For teaching purposes, the Röntgen photographs have proved of great value.

He has also made a practice of having a skiagraph of every case of fracture taken at the close of the treatment, and compared with the one secured at the beginning.

As a result of his investigation he has found that the so-called ideal or perfect union after fracture is rarer than has been generally believed, and that in almost all oblique fractures union takes place with more or less overriding of the fractured ends, a slight degree of which might escape simple manual examination, as the outline of the fragments is obscured by the callus, which is larger in proportion to the amount of overriding. In bones which are deeply covered-in by soft parts, it is possible for a considerable deformity to escape even careful observation. The condition of the fibula in the fractures of the upper two-thirds of the leg has frequently remained entirely unknown, whether the fractures have healed with or without deformity. For a correct understanding of the symptoms which frequently persist after union of a fracture, a correct knowledge of the position of the ends of the bones is, however, of the greatest importance, and this knowledge the Röntgen rays enable us to possess.

In cases in which there was long-continued functional disturbance after fractures, although manual examination revealed no deformity, and no injury to nerve or muscle could be established, the skiagraphs invariably showed overriding of the fragments, even though of slight degree. In all cases in which the skiagram showed absolutely no deformity, the functional disturbances consequent upon the fractures were slight and fleeting.

Perhaps the most interesting of the skiagrams which illustrate the article is one of a fracture of both bones of the leg in a man of fifty-two, in which union was delayed for four months, finally taking place with slight overriding of the fragments, resulting in a shortening of two centimetres. Many months after union had taken place, however, the subjective symptoms were so severe that the patient was thought to be exaggerating. The skiagram showed the reason for his complaints to consist in the fact that the overriding of

<sup>1</sup> Münchener med. Woch., October 13, 1896.

the fragments was much more marked than what was inferred from the manual examination, and that a piece of the fibula, six and one-half centimetres long, was broken right out of the continuity of that bone, and lay at an angle of about thirty degrees with the long axis of the limb. The deformity of the fibula could not have been made out without the Röntgen rays.

The skiagrams are full of interest, and sustain the point brought out by Dr. Codman at a recent meeting of the Boston Society for Medical Improvement, and illustrated by a skiagram of a fracture of the forearm, that fractures which have been brought into a position that is apparently perfect by manipulation, will frequently show more or less dislocation of the fragments when tried by the Röntgen tests.

Is the time far distant when every fracture will be not merely examined, but reduced and dressed under the fluoreoscope? It is possible that in certain cases the reduction of the deformity revealed by the fluoreoscope will be impossible; but it would appear at least probable that, aided by the exact knowledge of their extent, and of the direction in which pressure must be applied to correct them, the deformities of fractured bones which will persist after surgical efforts at their correction will be considerably rarer than heretofore.

In case operative efforts are required to correct deformity, they can be more intelligently and effectively directed under the guidance of the fluoreoscope and skiagram than under the knowledge gained by the surgeon's unaided fingers, especially when he is dealing with bones deeply covered by muscle, fascia and fat.

## Obituary.

### FRANCIS HUNTINGTON RANKIN, M.D.

DR. FRANCIS HUNTINGTON RANKIN, was born at Fish-kill-on-the-Hudson, N. Y., on September 25, 1845. His father, Robert Gosman Rankin, was a prominent lawyer in New York City. He was graduated from the medical department of the New York University in the spring of 1869. Shortly after he went abroad and spent a year in the hospitals of Vienna. At the breaking out of the Franco-Prussian war in 1870-71, he went to Berlin, and received an appointment as acting assistant-surgeon in the Prussian army. In a short time he became acting full surgeon, and after returning to America he received the "steel medal of thanks" from the Prussian government.

He began the practice of medicine in New York City in the summer of 1871, and during the first year held the position of assistant inspector of the New York Board of Health. He was subsequently connected with the New York Hospital for Diseases of the Nervous System, the Manhattan Eye and Ear Hospital, the Demilt, Children's Northeast Dispensaries and several other institutions. He was also tutor and assistant to the chair of *materia medica* in the medical department of the University of New York.

In the summer of 1876, Dr. Rankin removed to Newport and entered into partnership with Dr. Austin L. Sands, who died in the following year, since which time he has continued alone in practice. He was a fellow of the Rhode Island State Medical Society, and was instrumental in forming the Newport Medical Society, of which for years he was president. He was a member of the Newport Sanitary Association, and the attending physician at the Newport Hospital. He has frequently contributed to the medical literature of the day through the pages of the leading journals and periodicals.

On the 11th of November, 1879, he married Grace, daughter of Jacob Voorhis, Jr., of New York.

Dr. Rankin, since his residence in Newport, had gained an extensive practice, but during the past three or four years he had suffered from ill health. He had intended to spend the winter in the South. By his death Newport lost a respected citizen and one of its leading professional men.

### MEMORIAL RESOLUTIONS.

At a special meeting of the Newport Medical Society, held at the residence of Dr. Horatio R. Storer, presided over by First Vice-President Dr. C. F. Barker, the following preamble and resolutions were adopted:

WHEREAS, in His inscrutable wisdom Almighty God has seen fit to remove from the scene of his earthly labors, our beloved President; therefore

Resolved, That we bow in submission to His divine will.

Resolved, That in the death of Dr. Francis H. Rankin, the Medical Society, of which he was the founder, has met with an irretrievable loss.

Resolved, That the profession of medicine has parted with one of its brightest leaders, a man who was always working for the sanitary welfare of this city, for the good of the poor, and the benefit of the profession of which he was so bright an ornament.

Resolved, That no man could have led a purer or more useful and disinterested life and that the urbanity of his manners, the gentleness of his disposition, the truthfulness of his character and the manliness of his nature, served to bind with bonds of sincerest love the enduring friendship which he always inspired in all who had the privilege of knowing him.

Resolved, That we offer our sincere sympathy to his afflicted wife and relatives.

Resolved, That the Society attend his funeral in a body.

Resolved, That a copy of these resolutions be published in the daily papers of this city and in a prominent medical publication in New York, Boston and Providence, and that a copy be presented to his family.

V. MOTT FRANCIS, M.D., 2d Vice Pres.,  
HENRY E. TURNER, M.D.,  
STEPHEN C. POWELL, M.D., } Committee.

### DR. ANDREW MURRAY SMITH.

At the regular meeting of the Berkshire District Medical Society, held at Pittsfield, October 29, 1896, it was unanimously voted, that the following *minute* be entered upon the records of the Society, and copies sent to the *Boston Medical and Surgical Journal* and to the family of the late Dr. Smith.

The members of the Berkshire District Medical Society desire to express their sorrow for the death, on the 25th inst., of their fellow-member, Dr. Andrew Murray Smith, of Williamstown, Mass., and, at the same time to place on record their high appreciation of his many sterling qualities as a physician and as a man.

Dr. Smith was graduated from the Berkshire Medical College, in 1847, and had therefore been engaged in the practice of medicine for nearly fifty years. This whole period was spent in Williamstown, with the exception of a year and a half, during the war, when he served in the Army, as assistant-surgeon, and afterwards surgeon of the 40th Massachusetts Regiment. He inherited his profession, being the son of Dr. Samuel Smith, who also resided and practised in Williamstown.

He had been a member of this Society since 1855, and was one of the last of a notable group of medical men who practised in this county, and formed the bone and sinew of this Society, while the Berkshire Medical College was still flourishing.

Our Society is now composed of a younger generation of men, some of whom have had little or no acquaintance with Dr. Smith; but some of us have enjoyed the privilege of his friendship for many years; and we take pleasure in looking back upon the long period when he was a regular attendant at our monthly meetings.

We recall his unfailing courtesy and geniality, his special kindness to younger men, his readiness and felicity of speech, and the interest and value of his medical papers and reports.

In recent years he has been less frequently seen at our meetings; but he has always been gladly welcomed by his old friends who have rejoiced to see that advancing age could not impair the warmth of his heart or the clearness of his mind.

To his sorrowing family, we extend our heartfelt sympathy; and with them we find comfort in the thought that our late brother was one whose strong Christian faith robbed death of all its terrors.

L. C. SWIFT, Secretary,  
Berkshire District Medical Society.

## METEOROLOGICAL RECORD

For the week ending November 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. °		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S...1	30.01	52	59	46	96	88	92	N.W.	S.W.	7	5	G.	C.	
M...2	30.16	56	66	47	74	59	66	S.W.	N.	14	10	C.	C.	
T...3	30.39	46	51	42	70	80	75	N.W.	S.E.	11	7	C.	C.	
W...4	30.38	48	53	44	84	79	82	S.	S.E.	3	14	O.	O.	
T...5	29.85	55	66	49	90	92	91	S.E.	S.	18	24	R.	R.	1.00
F...6	29.78	55	65	45	83	65	74	W.	S.W.	14	18	C.	C.	.04
S...7	29.96	51	61	41	79	62	68	S.W.	S.W.	11	12	C.	C.	
☞	30.06		61	45			78							1.04

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threat; S., snow. † Indicates trace of rainfall. ☞ Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 7, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,892,332	618	213	8.64	16.32	2.74	.62	4.16
Chicago	1,678,967	—	—	—	—	—	—	—
Philadelphia	1,164,000	374	113	10.80	12.96	1.35	1.35	7.56
Brooklyn	1,100,000	—	—	—	—	—	—	—
St. Louis	560,000	—	—	—	—	—	—	—
Boston	494,205	227	80	16.72	8.80	.88	2.64	10.56
Baltimore	496,816	175	51	17.67	10.83	2.28	6.27	8.65
Cincinnati	336,000	—	—	—	—	—	—	—
Cleveland	314,537	84	32	26.00	8.33	—	3.57	20.23
Washington	275,500	—	—	—	—	—	—	—
Pittsburg	238,617	—	—	—	—	—	—	—
Milwaukee	275,000	—	—	—	—	—	—	—
Nashville	87,764	22	5	24.90	4.15	4.15	8.30	4.15
Charleston	65,165	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	98,687	32	16	15.65	12.52	9.39	—	3.13
Fall River	88,020	24	5	12.48	20.80	8.32	—	4.16
Lowell	84,859	—	—	—	—	—	—	—
Cambridge	81,619	26	6	11.52	19.20	3.84	3.84	3.84
Lynn	62,355	14	3	28.56	—	—	—	7.14
New Bedford	55,254	11	5	9.09	9.09	—	—	9.09
Springfield	51,534	10	3	10.00	20.00	—	—	—
Lawrence	52,153	15	7	6.66	6.66	—	—	6.66
Holyoke	40,149	—	—	—	—	—	—	—
Salem	34,437	15	4	6.66	6.66	—	—	6.66
Brookton	33,157	—	—	—	—	—	—	—
Haverhill	30,185	7	2	—	71.40	—	—	—
Malden	29,709	11	1	9.09	18.18	—	—	9.09
Chelsea	31,295	12	4	8.33	8.33	—	8.33	—
Fitchburg	26,394	5	3	40.00	—	—	—	20.00
Newton	27,422	5	2	20.00	—	—	—	20.00
Gloucester	27,663	—	—	—	—	—	—	—
Taunton	27,093	8	0	—	12.50	—	—	—
Waltham	20,877	8	3	12.50	12.50	—	—	12.50
Quincy	20,712	—	—	—	—	—	—	—
Pittsfield	20,447	4	1	—	50.00	—	—	—
Everett	18,578	—	—	—	—	—	—	—
Northampton	16,738	—	—	—	—	—	—	—
Newburyport	14,554	6	0	—	—	—	—	—
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 1,808: under five years of age 582; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 231, acute lung diseases 241, consumption 221, diphtheria and croup 128, diarrheal diseases 39, typhoid fever 39, scarlet fever 8, whooping-cough 7, erysipelas 4, measles and cerebro-spinal meningitis 3 each.

From scarlet fever Boston 3, New York, Philadelphia, Nashville, Fitchburg and Clinton 1 each. From whooping-cough New York 3, Boston 2, Cleveland and Nashville 1 each. From erysipelas New York, Philadelphia, Baltimore and Springfield 1 each. From measles New York 2, Lynn 1. From cerebro-spinal meningitis Boston, Worcester and Lynn 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending

October 31st, the death-rate was 19.7. Deaths reported, 4,104: acute diseases of the respiratory organs (London) 387, diphtheria 96, measles 66, fever 61, diarrhea 47, scarlet fever 46, whooping-cough 43.

The death-rates ranged from 12.3 in Portsmouth to 25.8 in Oldham: Birmingham 19.7, Bradford 18.5, Bristol 14.5, Cardiff 17.6, Gateshead 18.0, Hull 19.4, Leicester 17.1, Liverpool 23.7, London 20.2, Newcastle-on-Tyne 20.4, Norwich 13.4, Nottingham 24.7, Salford 17.6, Sheffield 18.6, West Ham 15.2.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 31, 1896, TO NOVEMBER 13, 1896.

Leave of absence for four months, to take effect upon being relieved from duty at Fort Monroe, Va., is granted MAJOR EDWARD B. MOSELEY, surgeon, U. S. Army.

FIRST-LIEUT. JOHN H. STONE, assistant surgeon, is relieved from duty at Fort Leavenworth, Kan., and ordered to Fort Riley, Kan., for station.

## APPOINTMENTS.

To be assistant surgeons with the rank of First-Lieutenant:

BASIL H. DUTCHER, of New York, October 26, 1896.

LEIGH A. FULLER, of New Jersey, October 26, 1896.

FRANKLIN M. KEMP, of New York, October 26, 1896.

GEORGE A. SKINNER, of Minnesota, October 26, 1896.

CARL R. DARNALL, of Texas, October 26, 1896.

WILLIAM E. RICHARDS, of Mississippi, October 26, 1896.

## PROMOTIONS.

To be assistant surgeons with rank of Captain, after five years service:

FIRST-LIEUT. HENRY C. FISHER, October 31, 1896.

FIRST-LIEUT. HENRY A. SHAW, October 31, 1896.

FIRST-LIEUT. CHARLES F. KIEFFER, October 31, 1896.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 14, 1896.

H. LAMOTTE, assistant surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to treatment at Naval Hospital, Philadelphia.

E. H. MARSTELLER, surgeon, detached from the "St. Mary's," ordered home and placed on waiting orders.

R. WHITING, surgeon, ordered to the "St. Mary's."

## RECENT DEATHS.

FRANCIS HUNTINGTON RANKIN, M.D., died in Newport, R. I., November 9th, in the fifty-first year of his age.

PROF. GEORGE LEWIN, the eminent dermatologist, died suddenly November 2d, from paralysis of the heart. He was seventy-six years of age. Last spring he had resigned his position as professor of dermatology of Berlin University and physician to the Charité Hospital, and had since devoted himself to scientific work.

## BOOKS AND PAMPHLETS RECEIVED.

Report of Thirteen Cases of Multiple Neuritis occurring among Insane Patients. By E. D. Bondurant, M.D. Reprint. 1896.

Medical Department of the University of Vermont and State Agricultural College, Burlington, Vt. Forty-fourth Annual Announcement, 1897.

Observations on the Local Use of Hydrochloric Acid in Bone Necrosis of Tuberculous Origin. By Jerome Hilton Waterman, M.D. Reprint. 1896.

An Exact Method for Determining the Capacity of the Stomach and the Amount of Residual Contents. By J. H. Kellogg, M.D. Reprint. 1896.

Mental Overstrain in Education. By G. E. Shuttleworth, B.A., M.D., President Thames Valley Branch, British Medical Association, etc. Reprint. 1896.

The Diagnosis of Tuberculosis from the Morphology of the Blood: An Original Research, with Report of Cases. By A. M. Holmes, A.M., M.D. Reprint. 1896.

Transactions of the American Climatological Association for the year 1896. Volume XII, containing Part II of the Report of the Committee on Health Resorts. Philadelphia. 1896.

Some Studies of the Blood in Thyroid Feeding in Insanity. By Middleton L. Perry, M.D., Morris Plains, N. J., Assistant Physician at the New Jersey State Hospital. Reprint. 1896.

## Original Articles.

STUDIES IN ANESTHESIA AND ANESTHETICS.<sup>1</sup>

BY DANIEL E. KEEFE, M.D., SPRINGFIELD, MASS.

THE necessary limits of a paper for an occasion like this precludes a complete discussion of all the points of interest and importance relating to anesthetics. I shall content myself, therefore, with drawing your attention to the relations of ether and chloroform, incidentally mentioning nitrous oxide. I shall consider their relative strength, desirability and danger, as well as the best method for their administration; also the value of the statistics of fatal cases, concluding with a few statements more or less dogmatic, which I formulate as the result of some study, but more particularly from my own observations.

The two most important contributions to the subject of anesthetics during the last ten years are the report of the Second Hyderabad Commission<sup>2</sup> and the able paper of Dr. H. C. Wood before the Tenth International Medical Congress at Berlin, 1890. The conclusions of both agree on most points; but while Dr. Wood maintains that death from chloroform may take place either from primary respiratory paralysis or cardiac arrest, the latter being the usual mode; the Commission insists that respiratory paralysis is always primary and cardiac arrest always secondary. Undoubtedly the experiments of the Hyderabad Commission are the most accurate, extensive and far-reaching ever performed, and perhaps will never again be equalled so far as the inferior animals are concerned, for it used about 600 animals in the work, and availed itself of the most exact methods for recording its observations. So its conclusions are to be taken with great confidence. Dr. Woods's methods were equally scientific; and he quotes Dr. Chisholm of Johns Hopkins Hospital, Dr. Hare and others, whose experiments and conclusions agree with his own. He admits, however, that although chloroform is very fatal to dogs, cats show great tolerance of it. This very admission proves that there is nothing essentially lethal in the chloroform, but that the element of individual susceptibility is a very important consideration.

The only other paper on the general subject of anesthetics presented at the Tenth International Medical Congress was read before the Surgical Section by myself. Although when it was written I had no knowledge of the report of the Commission, for it was not printed, nor of the substance of Dr. Woods's paper, yet it is wonderful how near to the conclusions, especially of the former, I arrived.

I there said, regarding chloroform, A. C. E. mixture and ether: "For the purpose of discussion, as I do for practical purposes in their use, I shall treat them as uniform in their physiological effects, for the difference is not of such a character, nor is it so pronounced that it can be recognized by the senses."<sup>3</sup>

This was said in answer to the dictum of the leading text-books on materia medica and of anesthesia, to the effect that ether stimulated the heart and accel-

erated the pulse, while chloroform after first accelerating the pulse, acted as a cardiac depressor.

I insisted that neither acted as a *stimulant per se*, either primarily or secondarily; that it was the unusual situation, fear of the inhalation and operation that excited the pulse. I furnished reports of 178 inhalations in support of my statements, and my subsequent experience has convinced me more and more of the correctness of this contention. Now, if chloroform is just as free from tendency to produce cardiac syncope or paralysis as ether, as the Hyderabad Commission claim, and as I am disposed to think, the beliefs held by the vast majority of the profession must be revised. Professor Wood, while finding that in a large majority of his experiments on dogs the heart stops first, admits that respiration frequently is the first to do so, and that death may take place in either manner. He also states that the American dog is very sensitive to the lethal effects of chloroform as compared with the pariah dog of India; and indeed, Brown-Séquard, who was probably better qualified than any one else to speak on this subject, some years ago said that he noted a marked difference between the American and European dogs, that the vascular system was better developed in the latter, and that operations on them were much more bloody than like ones on American dogs. One would expect the difference between the American and Indian dogs to be much more marked, since the difference in temperature, habits and environment is greater.

So it would seem that there is something worth considering in the claim that the warmer latitudes are more favorable to chloroform than are more northern ones. But, may I ask, are they not also more favorable to ether or any other anesthetic? Is not the higher temperature of the surrounding media a help to tolerance, as well by preventing the loss of body heat by evaporation as by increasing the diffusibility of the anesthetic? Certain it is that the loss of heat is very large and the reduction of the body temperature considerable. We know, also, that the application of heat is one of the measures resorted to, and with reason, in cases of syncope under anesthetics.

My insistence, then, at the Berlin Congress that ether and chloroform were substantially alike in their effects on the pulse, that they did not accelerate it in any true sense, put me squarely on the same side as these eminent authorities, and against nearly all other recognized teachers and writers on the subject.

We now come to the consideration of the statistics of the matter. If chloroform is not more dangerous than ether, strength considered, why do more people die while inhaling it, and of what use are statistics? People die under chloroform as they do under ether and nitrous oxide; and chloroform, being the most powerful agent, is often substituted when failure is had with ether, and perhaps is frequently blamed for the sins of the latter. For instance, after a patient struggles for fifteen minutes with ether with no result, chloroform is substituted, the refractory patient is subdued, but not until the face is livid with venous blood, the return of which to the heart is prevented by spasm of the whole respiratory apparatus, and of the general voluntary muscles as well. The cerebro-spinal axis is, perchance, also congested, and pressure on the centres in the medulla may suspend either respiratory or cardiac movements, and the end has come. The patient is perhaps a plethoric, strong man in the prime

<sup>1</sup> Read before the Hampden District Medical Society, October 15, 1895.

<sup>2</sup> Lancet, June 21, 1890.

<sup>3</sup> I have just read (October 12, 1895) in Foy's Anesthetic Manual, p. 126, that Dr. J. C. Reeve in the Reference Handbook of the Medical Sciences has made this same claim, and therefore is in consonance with me in the matter.



of life, a free user of alcohol, and having perhaps an aneurism, fatty heart, or kidney disease without knowing it. And why should he not die? Indeed, the wonder is that he lived so long. Every day we see just such men dropping by the way, on our trains, in our railway stations, and in all places of public resort. Statistics may show more deaths from chloroform than ether, but I contend that the deaths under all anesthetics are too few to make the statistics of any value. Furthermore, the post-mortem examinations are so few, as compared with these deaths, that our want of positive knowledge of the *actual cause* detracts still more from their value. The deaths under anesthetics are, I assert without the fear of contradiction, fewer than the sudden deaths occurring in those not under anesthetics. If one dies while inhaling an anesthetic, that agent is blamed, but we frequently hear of a person walking into a physician's office to consult him for some—as was thought—slight indisposition, and expiring in the doctor's chair.

If one's days are numbered, if his sands of life are nearly run, by reason of some perhaps hidden malady, and he is liable to "give up the ghost" at any moment, how can an anesthetic he happens to inhale justly be charged with his death? It is true that the excitement, attending the inhalation, together with the fear of what is to follow, may be the exciting cause, but the real one had long before nearly completed its work. Moreover, if a life is already forfeited by disease, of what value is such a life, either to its owner or the body politic? What if the exciting cause be put in motion a few days before some sudden exertion or excitement acts as such and closes the scene? It is only putting the principle of euthanasia into practice, and providing a painless death, without inflicting any great loss. Be it understood that I express no opinion on the subject of euthanasia.

I have made considerable effort to find some statistics of sudden deaths, both in this country and in Europe, but find there are, strictly speaking, none such prepared.

I am, however, indebted to the United States Department of the Interior (Census Bureau), and to Hon. Wm. M. Olin, the able and obliging Secretary of this Commonwealth, for some valuable information pertaining to the matter. Dr. Turnbull,<sup>4</sup> as quoted in Dr. Wood's paper<sup>5</sup> has collected 427 deaths under all anesthetics, which the doctor estimates as being about one-third of the real number. Accepting this estimate as correct, it would give us 1,281 as the actual number of deaths in nearly fifty years. I estimate that ether and chloroform have, during this period, been administered at least 16,000,000 times, and 35,000,000 would be nearer the correct number, but I prefer to have a wide margin so that I cannot be accused of making high estimates to favor my position. This gives a death-rate of less than .00008 of one per cent., as compared with 2.19 per cent., the rate per annum in Massachusetts for the whole population. It may be said that the sudden deaths and those under anesthetics are included in the 2.19 per cent. death-rate. Yes—but they are so few that they make no difference worth noting in the figures. Thus we see how small a fraction are the deaths under anesthetics, as compared with the ordinary deaths taking place in this State. Again, last year<sup>6</sup> there were 49,084 deaths, and in looking over the reports of the medical

examiners I find this entry: "From all other, including alcoholism and various natural and unknown or ill-defined causes, usually of a more or less sudden nature," there were in 1893 reported 879 deaths, as compared with 890 in 1892. So, in two years we have in our own State, 1,769 sudden deaths without apparent cause, as against 1,281, in the whole world in nearly fifty years under anesthetics. The percentage of sudden deaths in this State, as compared with the whole number, is about 1.79 per cent. This would, assuming about 10,000 administrations<sup>7</sup> give us the number of deaths that ought to have taken place in this State under anesthetics in 1893 as about 178, or probably twenty times as many as took place in the whole world.

The foregoing figures are claimed to be only approximately correct, even the percentages are not closely figured. Let us now look into the character of the statistics of deaths under anesthetics.

In one edition of his book Dr. Turnbull gives a chart containing 100 deaths occurring in eight years under chloroform. We will take this chart as a fair sample. Of this 100 cases the causes are put down in only 30, and are—shock, 4; collapse, 15; disease of the heart, 6; asphyxia, 3; syncope, 1; spasm, 1. Symptoms are given as—convulsed, in six cases; struggled violently, respiration irregular, face livid, in one case; vomiting caused suffocation in two cases. Such records show nothing as to the relative danger of anesthetics, only that the condition contributed to the accident. Post-mortem examinations were had in 34 cases. In six they proved negative, while 28 cases showed fatty degeneration or some other disease of the heart, with such extras as "pus on surface of brain"; and in many the kidney, liver and spleen, one or all were also affected. In 22 the condition of the patients was given; and it was such that no anesthetic should have been given, for they were people well advanced in disease. Only four of the entire number are set down as healthy, while four had the chloroform habit and two died by self-administration. The fact that they had the habit of administering chloroform to themselves proves that there was nothing inherent in the chloroform inimical to their lives, otherwise they would have been dead before the habit was contracted. I may here say parenthetically that Sansom,<sup>8</sup> of London, in another series, performed 18 post-mortems, and found fatty hearts in all.

In 40 of the cases the quantity is given. In one case five minims were given; one, 15 to 20 drops; to a man forty-two years old, six minims; to a woman with uterine trouble, twenty-five years old, a few drops; 1, exceptionally small; 8, one drachm each; 11, two drachms each; 2, one and one-half drachms each. Thus, in 26 of the 40 cases the amount given was two drachms or less. These facts speak for themselves. The idea that six minims of chloroform would kill a healthy man forty-two years old, or that a few drops would cause the death of a woman twenty-five years old, even though all air were excluded, is preposterous, and I for one will not believe it. Neither will I believe that two drachms or eight grammes, if properly administered, will kill a *healthy* man. Fear alone, or acting in conjunction with the excitement and a disease necessarily fatal in itself, is what dealt the

<sup>4</sup> Anesthetic Manual, Laurence Turnbull, Philadelphia, 1885.

<sup>5</sup> Proceedings Tenth International Medical Congress, Berlin, 1890.

<sup>6</sup> 1893 is meant, for that is the latest year of which reports are published.

<sup>7</sup> I am indebted to Dr. John W. Pratt, the energetic and courteous Superintendent of the Massachusetts General Hospital for valuable information used in preparing this paper.

<sup>8</sup> Chloroform, its Action and Administration, by A. E. Sansom, London.

fatal blow. Thus is shown the fallacy, unreliability and general worthlessness of the statistics relating to anesthetics. Their small number makes them doubly valueless for deciding as to the relative safety of one anesthetic or another. Indeed, all the deaths under each and every one of them could and might happen from natural causes and be mere coincidences as to time, place and circumstance. Many observations have convinced me that there are two danger points in the administration of anesthetics.

(1) It has been proved experimentally that either anemia or hyperemia of the cerebro-spinal axis may induce convulsions more or less epileptoid in character. Believing that the heart is beating at its maximum as to force and frequency when the anesthetic is applied, the blood is being pumped into the brain with great force and volume, the irritating nature of the anesthetic acting upon the respiratory mucous membrane produces a state of spasm, both of the involuntary and voluntary muscles of respiration, thus forming an obstruction to the return circuit from the brain, which may cause such a state of congestion that the pressure on the cardiac or respiratory centres in the medulla may prove inhibitory, and death ensue from cardiac syncope, or as is most likely, from respiratory arrest. This respiratory arrest or spasmodic condition of the respiratory apparatus threatening immediate death, is the so-called "chloroform asphyxia."<sup>9</sup> I have found it in from three to five per cent. of cases under all anesthetics, as well as chloroform. Surgeon-Major Lawrie,<sup>10</sup> thinks it is caused by administering chloroform with an insufficient admixture of air, the strong chloroform being taken directly to the brain, which it paralyzes. I regard the explanation which I have given as much more in consonance with the physiological conditions known to exist, much less open to objection, and indeed the true explanation. Ordinarily, before this condition is produced the sedative action of the anesthetic lessens both the respiratory spasm on the one hand, and the cardiac force and rapidity on the other, and so removes the obstruction to the return of the venous blood while it diminishes the quantity of arterial blood sent. In this manner the respiration becomes easy and regular, and the first danger point is passed.

(2) After the anesthesia has been continued for a long time the heart's action becomes slower and weaker, the patient colder and colder, and perhaps so little blood is carried into the brain that anemia is caused; and the late deaths in convulsions are to be accounted for in this way. Here alcohol, ammonia and digitalis are indicated; and I suggest as good practice, not waiting for complete syncope, but giving a hypodermic of alcohol and one or two minims of fluid extract of digitalis when there is great pallor in the face and want of volume in the pulse. I say this notwithstanding that Dr. H. C. Wood, relying on the experiments of Dr. R. Dubois in administering alcohol to animals and then killing them with the anesthetic, and of his own in giving it when syncope had taken place, thinks that alcohol is of no value in these cases, being too closely allied to chloroform and ether, chemically and physiologically. But I would remind him that there is a vast difference between giving it when syncope is present, and producing syncope after the alcohol has been given. Moreover, he has not told us, if,

after failing with alcohol, he has succeeded with any other agent in restoring the heart's action.<sup>11</sup>

As to the relative safety and desirability of anesthetics, I may say that several years ago, Lewis A. Sayre, the man who with Sims and Bigelow, perhaps, did more to make American surgery known and respected the world over than any other, penned the following:

"My preference is for chloroform, in the use of which I differ from all known authorities, who insist that chloroform should be largely diluted with air. My rule is to exclude all air except such as is impregnated with chloroform; from five to twenty drops administered may, according to the age of the patient, accomplish most completely and promptly all that is desired, without causing any violent struggles on the part of the patient, which often follows the administration of air with the anesthetic."<sup>12</sup>

Since reading these words I have paid more attention to the claims of chloroform; and although I am not prepared to go so far as to extend the application of his ideas as to the complete exclusion of air, to adults, I think them perfectly correct as to children. So, too, I think chloroform is the best anesthetic for children, for lying-in women, and for large, strong, plethoric men, for persons having valvular heart disease, lung and kidney troubles, and in many other cases; while weakly women, and persons with nervous and fatty hearts, who are anemic, take ether very kindly. As to the relative strength, I would mark chloroform 2,560 units, ether 445 and nitrous oxide 1. Ether may be compared to chloroform as to danger as a toy engine is to a locomotive. The steam locomotive may be, and is, handled with almost perfect safety, but we must remember that it is a powerful piece of mechanism, and see that our feet never get under the wheels, or we in any way grow careless in its handling. I must confess, however, that I have seen as many dangerous and unpleasant symptoms follow the administration of ether as chloroform, and possibly more, and that all the unfavorable symptoms with all anesthetics related to the respiration.

In conclusion, I may say:

(1) If there is any suspicion of weak heart, get the patient under the influence of digitalis for twenty-four hours, and give a hypodermic of four grammes of the tincture before beginning the inhalation.<sup>13</sup>

(2) Every one administering an anesthetic should measure the dose. Fifteen grammes (or half an ounce) of chloroform is a proper dose to produce anesthesia in an adult, and should be poured on at once, and no more should be used, only as needed to continue the anesthesia.

(3) Forty-five grammes (or one and one-half ounces) of ether is enough for a woman, and sixty grammes (or two ounces) of ether is enough for a man, and should be the charging dose. There may be an exceptional case where even sixty grammes of ether will not subdue a patient, but I should consider such an one not a good subject for ether and would substitute or add chloroform.

(4) The *face*, pulse and *respiration*, in order named should be watched attentively during chloroform administration, and the *respiration* and *pulse* in ether.

<sup>9</sup> System of Surgery, Dennis, 1895, H. C. Lea & Co.

<sup>10</sup> I have a letter from Dr. Sayre, bearing the date of August 21, 1895, in which he says: "I have nothing to add to what I then said and no change or alteration to make in the mode of administration."

<sup>11</sup> Wood, in Dennis's System of Surgery, H. C. Lea & Co., 1895.

<sup>9</sup> P. F. Mundé, New York Medical Journal, November 18, 1890.

<sup>10</sup> Lancet, June 21, 1890.

It is not enough to see that the chest moves: we must hear the air enter the lungs.<sup>14</sup>

(5) A good plan is to combine chloroform with ether, especially if one fears to assume the responsibility of using pure chloroform; and twelve grammes (or three drachms) of chloroform and thirty grammes (or one ounce) of ether is a good charge, and can be depended upon to produce anesthesia. In this way the stage of excitement so common in ether anesthesia is avoided.

(6) Withdrawal of the anesthetic, the frequent momentary inversion of the patient, artificial respiration, strychnia, heat, digitalis, the galvanic battery, and sponging or sprinkling of face and breast with ice water, are the means for restoration of function arrested by anesthetics.

#### CLINICAL EXPERIENCE IN ABDOMINAL SURGERY AT THE MASSACHUSETTS GENERAL HOSPITAL.

BY J. COLLINS WARREN, M.D.

(Continued from No. 21, p. 510.)

##### HYSTERECTOMY.

*Fibroids of Uterus and Ovary, Abdominal Hysterectomy, Death.*—L. L., a colored girl, single, aged twenty-seven years, entered January 9, 1895. Gave an indefinite history of syphilis, but was never pregnant. Five years ago had prolapsus uteri, and has always suffered from menorrhagia. Two years ago she noticed increasing size of abdomen, and stayed for a while in the Boston City Hospital, but refused operation. All bodily functions have remained apparently undisturbed by the tumor, and she has had no pain. Last winter for a short time she passed blood from her rectum. On examination, the diagnosis of uterine fibroma was made, and operation advised on account of the great size of the tumor.

On January 18th an eight-inch incision was made and the abdominal cavity opened. Considerable fluid was swabbed out of the general cavity. A large fibroma of the right ovary presented, overlaid in all directions by omentum whose veins, arteries and lymphatics were enormously dilated and tortuous. The omentum seemed to enclose the tumor as in a net, and the tumor seemed to be fed principally from the large vessels of the omentum. The tumor (weighing sixteen pounds) was found to be attached to the fundus uteri by a pedicle of about three fingers' breadth. After the omentum vessels had been gathered in a bunch, clamped and tied, the tumor was lifted out of the abdominal cavity, the pedicle clamped and the tumor cut away. The uterus was much enlarged with fibroids in the walls and it was thought best to remove it also. The broad ligaments were tied, cut, and the uterus removed over a rubber tourniquet, leaving peritoneal flaps. The flaps were inverted and sutured with silk. All bleeding points were tied with silk. The patient stood the operation well, and left the table without any stimulant. In the evening her pulse began to rise, but without other sign of hemorrhage. Stimulants and salt solution were exhibited, but with only temporary effect, and about twelve hours after the operation she died.

Examination showed free clotted blood and salt solution in the abdominal cavity. No bleeding point

discoverable, but the hemorrhage probably occurred from some omental vessel.

*Fibroids of Uterus, Abdominal Hysterectomy, Recovery.*—A washerwoman, fifty-three years old, widow, entered the hospital January 1, 1894. Catamenia began at eighteen, induced by drugs. Sixteen years ago miscarriage at three months. Since then two children. Four years ago was treated in Boston City Hospital for grippe and "inflammation," with bearing-down pains. She then noticed a lump in left iliac region. Considerable menorrhagia and some leucorrhea. Has been treated by electricity. Tumor fills lower abdomen, nodular and slightly movable. Cervix is pushed to right and backwards.

January 19th. Operation in Trendelenburg position. Five-inch median incision below umbilicus. The uterus was of the size of the fetal head at birth, and was studded with multiple tumors. There were no adhesions. Broad ligaments ligatured and clamped and cut away. Peritoneum dissected away from uterus to junction of body and cervix, and a wire ecraseur placed at this level. The uterus was cut away, stump and cervical canal cauterized, and the stump supported by the pins. The abdominal wound was closed with stump in the lower angle. Sterile dressing.

On the eighth day stitches were out. On the twelfth day the stump was cut away and pins removed. At this time she complained of considerable pain on micturition. Citrate of potash and Poland water were administered; but in spite of all treatment, the urinary symptoms persisted. Thirty-four days after the operation there was considerable abdominal pain, relieved by morphia and high enemata of turpentine. The stump was trimmed every day and dressed with peroxide and corrosive.

On March 12th, fifty-three days after the operation, she was discharged well.

*Multilobular Fibro-Myoma of Uterus, Abdominal Hysterectomy, Recovery.*—A single woman, colored, cook, thirty-two years of age, entered the medical wards in September, 1893, and was treated for uterine fibroid of three and a half years' duration with localized peritonitis. Since then she has had pain in back and legs. General condition is good. The lower abdomen is filled with a solid, movable tumor. To the left of and above the umbilicus is another smaller tumor. By vagina the tumor seems to fill the entire pelvis and to be very firmly fixed. The cervix, very far anteriorly, is felt as a mere dimple.

Operation in Trendelenburg position. A six-inch median incision from one inch above the umbilicus exposed a uterus the size of a child's head, with four subserous fibroids. Many adhesions were torn away and the broad ligaments tied close to uterus and cut away. A wire ecraseur was placed around the cervix at the internal os, and the uterus was removed. The cervical canal was cauterized; many bleeding points in the torn adhesions were secured; and the abdominal wound was closed about the stump, which was secured with pins.

The patient made a good recovery from ether, but required morphia for pain referred especially to the rectum. On the ninth day the stitches were removed. On the eleventh day the clamp and stump were taken away without any bleeding. On the thirty-third day she was discharged, well.

July, 1895. Is in California working for a family,

<sup>14</sup> Dr. Davis's Anesthetics, London, 1887.

and has been there some months. Was perfectly well and able to work before leaving.

**Cancer of Uterus, Laparo-vaginal Hysterectomy, Recovery.**—A woman, twenty-four years old, married, entered the hospital October 27, 1893. Her mother died of cancer of the uterus. She had an instrumental labor four years ago, the child dying at six weeks. She has never been strong. Catamenia regular, but very painful and very profuse. In last two months excruciating pain over pubes; foul leucorrhea, lately stained with blood. In poor condition. Cervix replaced by cauliflower growth, granular and bleeding easily. Induration in both culs-de-sac. Ovaries normal. Fundus uteri movable. The cervix was thoroughly curetted.

Operation, December 1st. With the patient in the lithotomy position an incision was made about the cervix, and the uterus freed from attachments to half way up the body. The vagina was packed with sterile sponges, and the patient placed in the Trendelenburg position. A five-inch median abdominal incision exposed the intestines, which were walled off with gauze. The broad ligaments were tied off with silk. The peritoneum was separated down to the vagina. The uterine arteries were tied separately and the uterus removed. Although the vagina was found to be infiltrated with the disease, the poor condition of the patient rendered further procedure inadvisable. The peritoneum was sewed over the vagina and the abdominal wound closed without drainage. Stimulants were administered, with heaters, and the foot of the bed was raised.

There was considerable pain after the operation, which persisted until discharge. The pain was in the lower back, and was only partially relieved by drugs. Vaginal douches were employed for a few days. On the eighth day the stitches were removed, and forty-one days after the operation she went to Waverley to gain strength for secondary operation upon vaginal infiltration.

Dr. Whitney reported as follows: "Small, soft, fragmentary masses, which showed masses of epithelial cells infiltrating among the deeper structures of the uterus, with more or less round-cell infiltration."

This patient was examined by me in the winter of 1895. There was then an enormous infiltrating mass in the pelvis, and involving the bladder wall. On July 9th she was heard from still alive. Her emaciation and weakness was extreme at the time I saw her.

In connection with these cases of hysterectomy it seems appropriate to report the following case in which the fibroid was treated by removing the ovaries.

**Fibroid of Uterus, Removal of Ovaries, Recovery.**—F. C. R. entered January 2, 1895. Age thirty-nine, married sixteen years, and never pregnant. Is generally weak and debilitated. The fibroid was discovered nine years ago. A year later was curetted. Since then menorrhagia with some metrorrhagia. There have been no gushes of blood, although she has fainted at times. The patient is anemic and hysterical.

January 7th. On opening the abdomen an apparently cystic tumor presented, but tap was dry. The tumor was so firmly imbedded in the pelvis that it was thought best not to attempt removal. Each tube was removed close to uterus, with its ovary. Stumps were cauterized. The wound was closed tight in two layers, and a dry dressing with swathe applied.

For the next two or three days the patient suffered great pain, probably ovarian. There was some vomiting, but little distention. On the fifth day her bowels were moved by cathartic. The pain disappeared; and with instructions to report for observation of tumor, she was, on the twenty-fourth day, discharged relieved.

Her physician, Dr. H. B. Palmer of Phillips, Me., makes the following report on July 6, 1895: "She still complains somewhat of soreness of muscles, probably due to muscular rheumatism. The fibroid has perceptibly diminished in size, and she has not menstruated since the operation. As the menorrhagia was the principal symptom which demanded relief, the operation must be regarded as successful."

**Perforation of the Uterus by a Uterine Sound, Hysterorhaphy, Recovery.**—A. T. T. first entered the hospital in 1892. She was then twenty-three years of age, had been married one year and nine months. After the birth of a child the catamenia had been very irregular, and she had suffered from leucorrhea. She was placed in the medical ward, and local treatment was employed without improvement. She was transferred to the surgical ward February 6, 1892. The examination made at that time showed enlargement and retroflexion of the uterus, with chronic endometritis; enlargement of the left tube and prolapse of the left tube and ovary. The parts in the left side of the pelvis were very sensitive. The ovaries were removed March 16, 1892, and were found to be slightly increased in size, containing numerous retention cysts. They were non-adherent. The patient made a good recovery from the operation, but did not appear to be relieved of her symptoms. Pain and leucorrhea, with the usual train of nervous symptoms, continued. An examination in January, 1893, showed the uterus to be atrophied and somewhat retroverted. In April, 1893, the uterus was thoroughly curetted and the patient discharged shortly after much relieved.

In my service of 1894 the patient reappeared complaining of the old symptoms. An examination was made under ether with reference to a second curetting. During this examination the sound, introduced by a colleague, perforated the uterus, apparently penetrating the cicatrix of the right Fallopian tube. The abdomen was opened immediately, and a rent in the right fundus was found about one half inch long. This was closed with four interrupted Lembert sutures of silk. An inspection of the uterus showed it to be greatly atrophied. In the right broad ligament no sign of adhesion existed. A careful inspection of the left broad ligament, which had been the seat of so much pain, showed a greatly enlarged and varicose vein, and a band of adhesion between the ligament and the sigmoid flexure. Two ligatures were placed around the vein, and the vessel was divided between them. The adhesion was also divided. The patient recovered without incident from this operation, and for a time seemed improved. A thorough course of local treatment during the following summer failed to arrest the uterine discharge and last winter the patient was still complaining of her old troubles.

Her last report, August 20, 1895, is more favorable. She considers that her operations have given her great relief, but she still suffers from leucorrhea.

**Acute Intestinal Obstruction, Constricting Bands Divided, Recovery.**—M. G., a strongly built laundress, entered October 22, 1894. Three years ago, when four months pregnant, she sustained a fall, followed

by miscarriage and localized peritonitis. Never well since. Complaints of anorexia and darting pains in lower abdomen, chiefly on left. Considerable bloating; abdominal distention. Passes much gas, and slightly constipated. Five days ago, she felt a sudden, sharp pain in epigastrium. No vomiting and no chills. Bowels did not move, and have not moved since. Pain became worse. Last evening, vomiting, becoming stercoraceous. Cathartics were freely administered, but were of no avail.

On entrance, patient appears as a well-nourished, very stout woman. Face much flushed. Tongue slightly coated. Shallow, rapid (30) respirations. Vaginal and rectal examinations negative. She has had considerable morphia within the last few days. Much abdominal distention and tympany.

Diagnosis of obstruction, probably by band. Prepared for immediate operation.

Median incision, about five inches long, through very thick and fat abdominal walls, on median line below umbilicus and this point was selected as nearest to the seat of pain. Clear, serous fluid free in peritoneal cavity. Claret-colored, much-distended small intestines exposed. The hand passed into the abdominal cavity quickly detected constricting bands near the line of incision. The intestines lying over these bands were drawn out of the wound and protected by hot, sterile towels. The upper part of the ileum was found to be bound down and constricted by a narrow fibrous band, which was divided with scissors. Other adhesions broken up by fingers. Very little bleeding. Other constricting bands near uterine fundus were tied and divided. After a careful wiping with sterilized gauze the intestines were returned into the abdomen. There was no evidence of permanent injury to the intestines, and the external wound was closed with interrupted silkworm-gut sutures. A dry sterile dressing was applied, with pad and swathe.

The patient's condition at the end of the operation was very poor. Cyanosis, rapid respiration, and rapid weak pulse. Foot of bed raised. Oxygen and cardiac stimulants were used during completion of operation and afterward. An enema (cathartic) was given with no result. There was much distention and cyanosis. Some vomiting. Oxygen all night. On the next day, after continued ingestion of cathartics and enemata, a small amount of feces and considerable gas escaped. Stimulated all through this day. Several large dejections relieved the distention and abdominal pain.

She was stimulated with strychnine for three days, and required the rectal tube occasionally.

On the eighth day the dressing was taken down. There was much redness for the entire length of incision, with fluctuation. Incision gave escape to quite an amount of odorless, dark-brown fluid. Sinus packed with gauze and syringed daily with styrene.

Sinus gradually closed in; and November 28th, bowels being regular, and having had no symptoms she was discharged, well.

July 5, 1895. "Bloats much." Fairly well, except for two attacks about two months ago of constipation and vomiting.

The constricting bands in this case appear to have originated from the localized peritonitis which occurred at the time of her miscarriage.

*Cancer of Rectum, Chronic Intestinal Obstruction, Littre's Operation, Recovery.*—E. T., aged forty-six, entered January 24, 1895. One sister died of phthisis,

but otherwise the family history is negative. Five years ago her uterus was curetted for menorrhagia, with resulting relief for two years. Three years ago a vaginal hysterectomy was done, the symptoms having recurred. Then she felt well, and gained until last April (1894), when she had pain in course of left sciatic nerve and along inner aspect of left thigh, the latter being relieved by defecation. There has been a tendency to constipation and gas formation; but by careful dieting and other expedients there has never been complete stoppage until during the past seven days—there having been no movement in that time. In this time she has vomited twice. The appetite is very poor. She has lost twenty to thirty pounds in weight in a year, and the left leg is especially atrophied.

She presented the characteristic cachectic appearance. The abdomen was much distended, and by rectum a gristly stricture reaching beyond the length of the finger was found.

On January 26th a five-inch incision was made in the left iliac fossa, and a knuckle of large intestine withdrawn. A bridge of skin was taken from the inner edge of the wound, passed through the mesentery under the bowel and sutured to the other edge of the wound. This was reinforced by gauze fastened by stitches. The bowel wall was stitched to the adjacent skin and protected by a dry dressing.

On the following day the loop of bowel was opened transversely, giving vent to large quantities of feces and gas.

Great relief was experienced from the operation. The movements were controlled by a gauze pad, and the wound was easily kept clean. Occasionally the distal end of the bowel was syringed with an antiseptic.

On February 14th she was discharged, much relieved.

The method employed in this case, suggested by Dr. S. J. Mixer, substitutes a flap of skin for the glass rod which is placed under the protruding loop of bowel. The object of this plan is to make a spur which will prevent all fecal discharge from passing down below the artificial anus. When the bowel has been cut across and has healed to the skin, there remain two distinct openings—one leading to the descending colon, the other to the rectum.

Patient reports, July 29, 1895, that there has been no symptoms of obstruction since the operation. The growth now involves the vagina and bladder. The patient takes about half a grain of morphine and thirty-five grains of phenacetine daily.

*Chronic Intestinal Obstruction, Left Inguinal Colotomy, Death.*—A man, sixty years old entered the medical ward December 19, 1893. Two years ago he had "dysentery," and since then has never been very well. Suffers from dyspepsia. These symptoms have been worse for the past month. Passage of feces always relieved the pain. Seventeen days ago he experienced a severe recrudescence of his symptoms, with vomiting and obstipation. Since then his bowels have moved only by enema. During the next week he did not improve, and was transferred to the surgical side. At that time he was much emaciated and very weak. The abdomen was so distended by gas that palpitation was unsatisfactory. He was fed by nutrient enemata, and prepared for operation for supposed ileo-cecal stricture.

A four-inch incision was made in the ileo-caecal region over the course of the ascending colon. The cecum was distended but normal. The hand detected a tight stricture of the sigmoid. The wound was closed and an incision made in the left iliac region, and the tightly constricted sigmoid flexure exposed. Owing to the poor condition of the patient, a resection was deemed inadvisable; therefore the bowel was sutured into the wound and the patient put to bed. Under the influence of stimulant enemata he made a good recovery from ether, and on the next day the intestinal wall was incised under cocaine, with immediate discharge of gas and feces. An oil enema was given through the opening, and a large amount of fecal matter evacuated. A dry dressing was applied to the wound and the patient stimulated.

During the morning the patient failed steadily, and at 12.15 P. M., twenty-four hours after the operation, he died.

Patients suffering from advanced intestinal cancer with prolonged chronic obstruction are poor subjects for surgical interference. I would advise in a case of this kind an incision through the abdominal wall with cocaine anesthesia—the bowel to be opened the following day. In this way not only is ether avoided, but all the attendant manipulations of an abdominal section. The method can be carried out easily as the abdominal walls are tense and thin.

*Renal Calculus, Nephrotomy.*—W. T. C., aged twenty-eight, a teamster, born in England and living in Cambridgeport, entered the hospital October 26, 1893.

When a year and ten months old he fell down stairs and had ever since suffered from pain in the right side. Eighteen years ago he had an attack of severe sharp pain in region of right kidney, shooting down into the testicle. He finally passed a stone about the size of a dried pea. Four years ago another stone was passed after a similar attack. For eighteen years there have been attacks of pain in the right side about every week. During the more severe of these there were chills and vomiting. Eleven days before entrance he had the last attack, of about twenty minutes' duration. But there has been a constant pain in the side ever since. He urinated every hour, there being no difficulty in urination but pain in the right groin preceding it. [The report on the condition of the urine is unfortunately lost from the hospital records.]

The examination of the abdomen was negative, except for tenderness over the region of the right kidney on deep pressure. Search for vesical calculus was without result. The patient was otherwise perfectly well but was totally disabled from work.

November 17th. An incision was made, five inches long, from the lower border of the ribs to the iliac crest, exposing the capsule of the kidney. Numerous adhesions were broken up, and four silk sutures were placed through the capsule and substance of the kidney by which it might be held in the wound, the hand being introduced into the wound so as to grasp the kidney. A calculus in the pelvis could be distinctly felt. A longitudinal incision was then made directly through the convex border of the kidney and through its substance into the pelvis, the knife being thrust through the organ until the point grated upon the stone. The bleeding which followed the withdrawal of the knife was most copious, but could

be readily controlled by the finger introduced through the wound in the kidney. The stone, which was adherent, was held by the point of the fingers and was then removed with forceps.



It was about as large as a peanut (as shown in the cut), and was composed of urates. The wound in the kidney was then packed with gauze, and the kidney

was stitched into the base of the wound. The peritoneum was not opened. A gauze drain was placed in the lower angle of the wound and a sterile dressing applied. This required frequent changing because of the free staining with urine. The wound was irrigated with styrene solution. For five days the diet was limited to milk together with diuretics. On the fifth day the packing in the wound in the kidney was loosened, and two days later was removed. After ten days the urine passed from the bladder was free from blood. After two weeks urine ceased to come from the wound. During the day at the end of this time the patient had considerable pain in the right groin, which toward evening ceased. Later in the evening, after micturition, he noticed a long thread of gauze protruding from the meatus, which he withdrew. It had evidently passed down the ureter, becoming detached from the packing in the kidney.

December 22d. Five weeks after operation the wound had healed excepting a small granulating spot, and the urine was normal. He was discharged well.

The patient has been perfectly well since the operation; his attacks of renal colic have entirely ceased, and he has been actively at work since his convalescence.

It should be stated here that this case is one of nephrotomy on the otherwise healthy kidney, and not a case of incision of a pus sac containing a calculus. The two operations cannot be classed together.

(To be continued.)

## Clinical Department.

### FOUR MONTHS' HOSPITAL WORK IN ABDOMINAL SURGERY.

BY F. W. JOHNSON, M.D.,

Surgeon, Gynecological Department, St. Elizabeth's Hospital;  
Surgeon, Gynecological Department, Carney Hospital, etc.

THE following operations were done during the spring of 1895, at the Woman's Charity Club, Carney, and St. Elizabeth's Hospitals. Of the forty-six, two died; one following a celiotomy for peritonitis and one following a hysterectomy.

The first case was one of peritonitis caused by a criminal abortion. Although she had been under observation for weeks, at no time did it seem wise to open the abdomen. She died the day following the operation (Case III, St. Elizabeth's Hospital).

The second case was in very poor condition from excessive loss of blood. As every means had been tried, without effect, at her last menstruation to check the flowing, it was thought unsafe to wait until menstruation appeared for fear she would bleed to death. She died three days after the operation. The autopsy showed no evidence of peritonitis (Case IV, Hysterectomies, St. Elizabeth's Hospital).



For suture material silk, silkworm-gut and catgut were used. In a large number of the cases catgut was the only material used inside the abdominal cavity. In Case VI, St. Elizabeth's Hospital, the incision was closed with catgut. The silk and silkworm-gut were made aseptic by prolonged boiling. They were kept ready for use in a 1 to 6,000 alcoholic solution of corrosive sublimate. After soaking in ether for several days and thoroughly stretching (the thorough stretching prevents kinking and twisting, which is so very annoying), the gut was cut into the desired lengths and baked for four hours at a temperature of 300° F. Bacteriological examinations made by Dr. J. H. Wright of gut prepared after this manner showed no living bacteria. I am afraid of the large-sized strands as it is difficult to sterilize their centres. Dr. Rice, who has had a large experience in sterilizing and examining catgut, says that certain varieties of catgut seemed to resist every known method of sterilization. I do not think it safe to trust those who make a business of sterilizing suture material. Aseptic silk sunk into the rotten tissues of a stump often becomes septic, and gives rise to trouble which continues until the silk is gotten rid of through the incision, bladder or intestines. I have had it escape by all these routes. This would be obviated by using catgut, but as the gut liquefies it makes a first-class culture medium for micro-organisms, and might be the starting-point for general infection. No attention was paid to sewing the peritoneum separately, and in all but one case the incision through the abdominal wall was closed with silkworm-gut.

In over one thousand cases of celiotomy I have never had a case of hernia except there had been deep suppuration in the line of the incision, or where prolonged drainage had been used. Every patient before getting about was provided with a suitably fitting abdominal supporter and was instructed to wear it for one year. The stumps were seared over with a Paquelin cautery to prevent infection of the ligatures by the cut end of the tubes or broad ligaments. Drainage was avoided if possible. When in doubt it was used. Some one has aptly remarked that drainage is an admission on our part of incomplete surgery. It should always be used when there is oozing. I prefer a large glass drainage-tube with no holes in the sides, which, if properly taken care of, is absolutely free from all danger. Gauze does not give so free drainage, must be used longer, and without anesthesia, causes severe pain on removal and a sinus is more apt to follow its use. Gauze soils the dressings and the edges of the wound. With the glass drainage-tube the dressings can be kept as sweet and clean as when put on. By bacteriological examination I have found the secretion in the glass drainage-tube on the third day free from pathogenic bacteria.

If, at the time of operation, septic pus or fluid gets into the peritoneal cavity I do not believe drainage or irrigation of any kind will prevent peritonitis or save the patient. Fortunately, nine times out of ten, the pus and fluid in the tubes and ovaries is sterile, as I have had verified by repeated bacteriological examinations. In abscess of the ovary the worse the fluid looks and the more rotten it smells the more likely it is to be sterile.

Where drainage is used the silk ligatures about the pedicles and in the broad ligament are very liable to become septic, and then a sinus is apt to remain until

the silk comes away. I have known such a sinus to remain open for four years, finally closing after the discharge of six or seven knots of silk. Where the intestine, bladder, or ureter is found seriously injured by disease, or where either is seriously injured in separating adhesions, drainage through the incision should be used for a few days. Drainage should be used if the intestine has been opened and there has been fecal extravasation. No drainage is called for where a healthy intestine has been repaired.

Irrigation was used but a few times. Sponging was considered far better. If non-sterile pus or septic fluid escapes into the peritoneal cavity, irrigation, no matter how practised, does little except increase the chances of peritonitis and death by disseminating the poisonous material among the intestines.

#### WOMAN'S CHARITY CLUB HOSPITAL.

CASE I. F. C., aged twenty-nine years, married.

Present Complaint: Pain in the lower part of abdomen, with sagging and dragging down.

Marital History: Two children; youngest two years old. One miscarriage four years ago.

Menstruation began at fourteen years; flow moderate, lasting four days, every two weeks; severe dysmenorrhea throughout sickness. Menstruated every four weeks until birth of first child.

Diagnosis: Retroversion. Uterus not replaceable.

Operation February 14th. Moderate amount of adhesions. Fimbriated end of left tube occluded. Left ovary enlarged and cystic. Left tube and ovary removed. Right tube and ovary not removed. Uterus fastened up and forwards by ventral fixation. Peritoneum covering right tube and right broad ligament studded with pearl-colored nodules the size of mustard-seed shot.

Discharged March 6th. Uterus in good position.

CASE II. E. B., aged twenty-six years, married.

Present Complaint: Severe pain in the left ovarian region, requiring morphine at menstrual periods for its relief. Uterus curetted last fall with no benefit.

Marital History: Never pregnant.

Menstruation began at fourteen years, lasting four or five days, dysmenorrhea beginning a week before the flow and lasting until the second day.

Diagnosis: Ovaries prolapsed and adherent.

Operation February 24th. Uterus curetted before abdomen was opened. Left tube curled about the ovary and adherent to it. Fimbriated end of tube adherent to ovary. Left ovary was the seat of a large hematoma. Left ovary and tube removed. Right ovary contained a small cyst. This was opened, scraped, cavity closed with silk, and ovary dropped back.

Discharged March 16th. Symptoms relieved.

CASE III. A. R., aged twenty-four years, married.

Present Complaint: Pain in the right ovarian region extending down the right thigh and leg.

Marital History: Two children. No miscarriages.

Menstruation began at fourteen years; flow small, every four weeks.

Diagnosis: Under ether, the left ovary was found to be prolapsed, enlarged and adherent.

Operation March 7th. Uterus had been curetted in February for endometritis. Left ovary was enlarged and cystic. Right ovary filled with retention cysts. Both tubes were firmly fastened to posterior surface of broad ligament. Both were thickened, and

their fimbriated ends were completely occluded by adhesions. Both tubes and ovaries removed.

Discharged March 27th. Symptoms relieved.

CASE IV. N. R., aged thirty-nine years, married.

Present Complaint: Weakness. Pain in back and lower abdomen.

Marital History: Two children. One miscarriage last March; at that time had a severe attack of peritonitis.

Menstruation began at fourteen years; flow considerable, lasting from six to eight days, regular; dysmenorrhea before and during the flow.

Diagnosis: Fluctuating mass filling the left side of the pelvis and pushing the uterus to the right. Temperature before the operation varied from 102° to 104°.

Operation, March 12th. While enucleating a large abscess of the left ovary it broke, pouring foul-smelling pus into the abdominal cavity. On the right side there was a very much enlarged ovary and a hydrosalpinx. Both tubes were much thickened and with the ovaries were fastened to the posterior surface of the broad ligament. There was such free oozing from the beds out of which the left and right ovaries were dug that drainage was used. No irrigation. There was quite free bleeding for twelve hours, at which time the glass drainage-tube was removed. By carelessness two pieces of gauze were left in the abdominal cavity, and delayed convalescence until they were removed.

Discharged May 19th, feeling well. Uterus large and heavy, broad ligaments boggy. The uterus would have been removed had her condition allowed of it.

CASE V. A. M. S., aged twenty-eight years, married.

Present Complaint: Severe pain in the left ovarian region. Weak feeling in back. Unable to work.

Marital History: No children. One miscarriage eight weeks ago.

Menstruation began at sixteen years; flow little, lasting three or four days, regular; dysmenorrhea the first two days.

Diagnosis: Salpingitis (probably pyo-salpinx).

Operation, March 12th. The tubes were occluded and the fimbriated ends were adherent to the uterus. Ovaries cystic. Both tubes and ovaries removed.

Discharged April 3d. Relief of all symptoms.

CASE VI. F. S., aged thirty years, married.

Present Complaint: Backache, pain in left ovarian region, and pain in left thigh and leg when walking.

Marital History: Three children, youngest two and one-half years old. No miscarriages.

Menstruation began at fourteen years, regular; slight amount of dysmenorrhea.

Diagnosis: Retroversion, with adhesions.

Operation, April 7th. The anterior parietal peritoneum was almost universally adherent to the intestines. Right ovary enlarged and cystic. It, with the right tube, was removed. After replacing the uterus it was kept up and forwards by ventral fixation.

Discharged May 5th. Uterus in good position.

CASE VII. M. W. H., aged thirty-seven years, married.

Present Complaint: Severe pain daily in right lower half of abdomen, severest in region of appendix. This pain is brought on and made worse by standing. Headaches. Was told she had appendicitis last summer. In bed a great part of the time.

Marital History: One child. No miscarriages.

Menstruation began at fourteen years, regular; flow moderate, lasting four days; dysmenorrhea.

Diagnosis: Nothing found. Advised exploratory incision. She had been sent in for removal of the appendix.

Operation, April 8th. No trouble found with the appendix. No evidence of former peritonitis. Liver less than one-half its normal size and very hard. Right ovary cystic. Right ovary and tube removed.

Discharged May 1st. Relief of all abdominal pain.

August 1st. Not gained much in strength. In bed part of every day. Pain, at times severe, in the right lower half of the abdomen.

CASE VIII. I. D., aged twenty-nine years, married.

Present Complaint: Constant pain in the left ovarian region. Severe dysmenorrhea. Supra-orbital and occipital headaches.

Marital History: Two children. No miscarriages.

Menstruation began at sixteen years; flow free, lasting from six to seven days, regular; dysmenorrhea.

Diagnosis: Retroflexion, with adhesions. Uterus non-replaceable.

Operation, April 9th. The right ovary with its enlarged Fallopian tube was glued to the uterus. The three organs were in the hollow of the sacrum. Right tube and ovary were removed and ventral fixation performed.

Discharged May 5th. Uterus in good position.

CASE IX. M. M. H., aged fifty-one years, married.

Present Complaint: Sore spot in right iliac region. Pain in the pelvis and limbs. Tired feeling all the time.

Marital History: No children. No miscarriages.

Menstruation began at fourteen years; always irregular, lasting three or four days; dysmenorrhea the first day. Menopause at forty-three.

Diagnosis: Uterus fixed by adhesions on the right side. Abundant evidence of former pelvic peritonitis.

Operation, April 11th. The right ovary, which was small and stone-like in feeling, was shelled out of the adhesions and removed with the tube. The left ovary was small and hard like bone. It was removed with the tube.

Discharged May 9th. Relief of all symptoms.

CASE X. A. T., aged forty years, married.

Present Complaint: Pain in left ovarian region for four years. Backache. Sagging and dragging down. Loss of flesh and strength. Unable to attend to her work.

Marital History: Several children.

Menstruation began at fifteen years; flow moderate, lasting seven or eight days, not painful.

Diagnosis: Left ovary prolapsed and adherent. Neurasthenia. Cervix was operated on two years ago.

Operation, April 23d. Both ovaries filled with retention cysts. Adhesions on the left side. Both ovaries and tubes removed.

Discharged May 11th. Relieved of pain.

CASE XI. L. A. B., aged thirty-seven years, married.

Present Complaint: Constant pain in the right ovarian region. Backache, and frequent pain in left ovarian region. Almost bed-ridden.

Marital History: Three children. Youngest four years old. No miscarriages.

Menstruation began at seventeen years, always irregular; dysmenorrhea the first two or three days.

Diagnosis: Endometritis. Hyperesthesia of the lower part of the abdomen.

Operation February 28th. Uterus curetted. No benefit.

Operation, April 25th. The right ovary was about the size of the tip of the little finger, and as hard as sclerosed tissue. It was removed with its tube. In the left ovary there was a good-sized hematoma. This was opened, cleaned out, and the cavity closed with silk. Ovary dropped back.

Discharged May 18th. Well.

CASE XII. J. G., aged thirty-eight years, married.

Present Complaint: Pain throughout the whole of the lower part of abdomen, but especially severe in the left ovarian region. Constant feeling of pressure and bearing down. Backache. Obstinate constipation. Unable to work.

Marital History: Never pregnant.

Menstruation began at thirteen years; flow profuse, lasting five days, regular; pain throughout.

Diagnosis: Fibroid of the uterus firmly fixed in the pelvis.

Operation, April 30th. The fibroid, the size of a coconut, was interstitial, and firmly fixed in the pelvis by adhesions to the rectum and pelvic wall. The tubes and ovaries were adherent to the fibroid uterus and intestines. After separating all adhesions both tubes and ovaries were removed.

Discharged May 22d. No flowing since operation.

August 1, 1895. Patient wrote that she had been free from all pain since the operation.

CASE XIII. N. C. B., aged thirty years, married.

Present Complaint: Pain in the lower part of the abdomen. Sagging and dragging down. Backache. Unable to work.

Marital History: No children. No miscarriages.

Menstruation began at fourteen years; flow scant, lasting two or three days, regular.

Diagnosis: Retroversion, with adherent tubes and ovaries.

Operation, May 2d. Tubes and ovaries adherent to the uterus and the posterior surface of the broad ligament. Intestine adherent to the left tube and ovary. Both tubes and ovaries removed.

Discharged May 26th. Symptoms relieved. Uterus in the first degree of retroversion.

CASE XIV. E. J., colored, aged twenty-eight (?) years, single.

Present Complaint: Severe attacks of colicky pain in a large ventral hernia which she has had for nearly a year. The hernia followed a laparotomy which was done for an ovarian cystoma. Totally incapacitated for work. Obstinate constipation. Dragging down from both loins.

Menstruation began at fifteen years; moderate flow, lasting seven days, regular.

Diagnosis: Ventral hernia the size of an adult head. The hernia occupied the whole length of the former incision.

Operation, May 2d. The bag of skin made by the protrusion of the abdominal contents was removed in an oval piece, care being taken to go well back on to unstretched skin. The omentum and intestines were adherent to the peritoneum of this oval piece and to the parietal peritoneum in the neighborhood of the hernial opening. All adherent omentum was removed.

A small cystoma of the left ovary, with the tube which was the seat of hydrosalpinx, were removed. On the right side the silk ligature which had constricted the pedicle of the cystoma was found and removed. One-third of the right ovary and the right Fallopian tube had been left. Both were removed. The opening in the abdominal walls was closed by three layers of interrupted silkworm-gut sutures.

Discharged May 27th. Well.

CASE XV. E. C., aged thirty-four years, married.

Present Complaint: Constant pain in the lower part of the abdomen, especially marked in the left ovarian region. Obligated to give up work. An attack of nausea every week or ten days. Has had three attacks of peritonitis during the past two years.

Marital History. No children. One miscarriage at seven months. Peritonitis followed the miscarriage. Dates her trouble from this miscarriage which was twelve years ago.

Menstruation began at fifteen years: flow profuse, lasting one week, regular, pain lasting throughout sickness.

Diagnosis: Chronic salpingitis and ovaritis. Uterus with tubes and ovaries bound together in one mass.

Operation, May 16th. The thickened and adherent tubes were dug out of the posterior cul-de-sac, and, with the ovaries which were buried in adhesions, were removed. The fimbriated end of both tubes was adherent to intestine. On account of the free oozing from the posterior cul-de-sac and the posterior surface of the uterus a glass drainage-tube was used for forty-eight hours. Had she had strength enough, the uterus would have been removed.

Discharged June 15th. Well.

CASE XVI. K. G., aged twenty-two years, married.

Present Complaint: Backache and pain in the left ovarian region.

Marital History: No children. No miscarriages.

Menstruation began at twelve years; flow slight, lasting three days, regular; dysmenorrhea since marriage.

Diagnosis: Chronic salpingitis.

Operation, May 20th. Ovaries and tubes matted together by numerous and strong adhesions in the hollow of the sacrum. Tubes enlarged and ovaries cystic. Patient took ether very poorly, and ceased breathing several times. The tubes and ovaries were literally ripped out, it taking all my strength to break some of the adhesions. A glass drainage-tube was left in for twelve hours on account of the oozing.

Discharged July 10th. Good condition.

CASE XVII. M. J. W., aged forty-two years, married.

Present Complaint: Obligated to be in bed most of the time on account of backache, pain in the lower part of the abdomen, and bearing down. Abdomen enlarged and very sensitive to the touch. Uterus prolapses outside the body and causes great inconvenience in walking.

Marital History: Four children, youngest nine years old. Two miscarriages.

Menstruation began at fourteen years. Menopause at forty-one.

Diagnosis: Ovarian cystoma. Uterus hangs between the thighs nearly down to the knees.

Operation, May 22d. An ovarian cystoma weighing eight and one-quarter pounds was removed from the left side. Right ovary was cystic and it with the

tube was removed. After drawing the uterus up into the abdominal cavity its posterior surface was fastened to the anterior abdominal wall by four silkworm-gut sutures.

Discharged June 14th. Relieved. To return for anterior and posterior colporrhaphy and perineorrhaphy. Uterus in good position.

CASE XVIII. J. W. W., aged thirty-three years, married.

Present Complaint: Pain in the lower part of the abdomen since birth of child eight years ago. Following labor had an attack of peritonitis confining her to bed nine weeks. During this time an abscess opened into the rectum.

Marital History: One child. No miscarriages.

Menstruation began at fifteen years; flow moderate, lasting four or five days; severe pain during the flow.

Diagnosis: Pyosalpinx.

Operation, May 22d. Intestines bound to both tubes and ovaries. Tubes enlarged and thickened and bound to the rectum. The rectal adhesions were separated with great difficulty. Free oozing from rectal wall and Douglas's cul-de-sac. Glass drainage for twenty-two hours.

Discharged June 17th. Well.

CASE XIX. M. E. G., aged twenty-seven years, married.

Present Complaint: Pain in both ovarian regions and constant backache. Dysmenorrhea.

Marital History: No children. No miscarriages.

Menstruation began at fifteen years; flow quite free, lasting seven to eight days, irregular; severe pain throughout the flowing.

Diagnosis: Chronic salpingitis and retroflexion. Uterus with broad ligaments bound in the pelvis by a mass of adhesions.

Operation, May 28th. The enlarged tubes were bound up with the uterus, omentum and intestines in one mass in the pelvis. In separating the uterus from the rectum the serous coat of the gut was stripped off for some two inches, and its muscular coat was torn in two. The hemorrhage was so free and the injury so far down in the pelvis narrowed by adherent intestines that I could not get at the injury to repair it. A glass drainage-tube was inserted. Several ounces of blood were sucked from the tube, but only serum was obtained at the end of twenty-three hours.

Discharged June 28th. Well.

(To be continued.)

#### A CASE OF CANCER OF THE CEREBELLUM, METASTATIC FROM THE BREAST; DEATH; AUTOPSY.

BY EDGAR GARCEAU, M.D.,

Surgeon to Out-Patients, Free Hospital for Women, Boston.

MRS. D. was an Englishwoman, forty-nine years old. She was of medium height and well developed, being inclined to be somewhat stout. After the birth of her only child, eighteen years before her death, she had an abscess of the right breast; she always felt the "changes of the weather" in that breast afterwards. Her grandmother is said to have died of mammary cancer.

About two years before her fatal illness began, she had a cancer removed from the right breast by Dr. Maurice H. Richardson at the Massachusetts General

Hospital. The hospital records say that the tumor was the size of a small apple, and that the axilla was opened and a few very small glands removed. Examination by Dr. W. F. Whitney showed the growth to be cancer combined with chronic interstitial mastitis.

Since this operation she was very well, and had no inconvenience whatever with the exception of diminution of vision of the left eye, which slowly and steadily increased. The vision began to be affected shortly after the operation. Her general health and strength, however, since the operation were very good, and she began to think that her lease of life was going to be long, when suddenly, without any warning whatever, she began to have a severe agonizing pain in the upper occipital region, radiating into the right eye and sometimes into the left eye. It was constant night and day, and gave her no rest. The most comfortable position was lying on the left side with the knees flexed, keeping perfectly still, for the slightest movement accentuated the pain. When the pain came on vertigo and vomiting accompanied it, the vomiting being uncontrollable and not dependent on ingestion of food.

*Physical Examination.*—Over the right breast was a scar which was deeply indurated, but no signs of malignant degeneration were present. The axillary glands were not enlarged. The lungs were normal. Pressure over the spine and head did not cause pain. Extending the lower limbs caused increase of pain in the head. The tongue protruded in a straight line. Temperature 98.4°, pulse 72. Pupils of the eyes of normal size and equally dilated. On examination with the ophthalmoscope choked disk was found in both eyes. Hearing was normal. Answered questions coherently and intelligently, though slowly and with effort. Features dull and apathetic. Somnolency marked. Skin dry and cool. On inquiring further into the eye symptoms, it was found that on some days the vision in both eyes was fairly good, while perhaps the next day it might be wholly gone. When she was very weak, she had a sensation as though she were sinking into an abyss. The sensation was horrible.

The diagnosis of tumor of the cerebellum was made, and she was sent to the Boston City Hospital. There the nature of the disease was fully explained to her, and also the great risk incurred in operating. She fully appreciated her condition, for her intelligence was unimpaired, and she declined to submit to an operation.

She lived just nine weeks from the time the pain began in the occipital region. During this time nothing controlled the vomiting except cocaine, and the relief with this drug lasted only a few days. How she lived during all that time was a mystery, for she took nothing except a little whiskey and a little milk now and then. Large doses of morphine had to be given for pain. On the day before she died she had two severe convulsions affecting the right arm, right lower limb and head, the latter being drawn to the right. She had another convulsion on the day of her death.

*The Autopsy* was made by Dr. J. C. D. Pigeon. Head only opened. The skull was very thick. Dura mater not inflamed at any portion. Very little arachnoid fluid. Sinuses contained but little blood, and that was very fluid. The outer portion of the right half of the cerebellum was occupied by a dense, hard tumor the size of a good-sized olive, and about

the same shape as an olive; it was quite by itself, and was held loosely in position by fragments of disintegrated cerebellar tissue. Besides this single large tumor there were also several smaller ones the size of green peas, all imbedded in the same disintegrated tissue. They were placed irregularly along the under surface of the cerebellum extending towards the fourth ventricle, none of them, however, encroaching on the fourth ventricle. There was no pressure anywhere by a collection of fluid; in fact, in the vicinity of the tumors there was rather less resistance than on the other side of the cerebellum. On examining the cerebrum, two other tumors were found. One was at the posterior portion on the right, at a part exactly corresponding to the cerebellar tumors and lying immediately above them; the other tumor was on the left hemisphere at a point two and one-half inches from the upper extremity of the fissure of Rolando and anterior to it; being at the same time somewhat nearer the median line. It was this tumor undoubtedly that caused the convulsions affecting the right side. Both tumors in the cerebrum were the size of a cherry. All the tumors were on section streaked with black.

A microscopical examination was made by Dr. J. J. Thomas, and his report is as follows: "The tumor is seen to consist essentially of larger and smaller columns and masses of epithelial cells, lying in a rather loose stroma of connective tissue. The epithelial cells have vesicular nuclei and a considerable amount of protoplasm, and resemble in their appearance and arrangement the cells seen in mammary cancer. The connective tissue stroma is edematous in places, and is nowhere dense or great in amount in proportion to the masses of epithelial cells."

*Anatomical Diagnosis.* — Metastatic carcinoma, of the mammary type.

This case was a typical one of cerebellar tumor. The cardinal symptoms — headache, pain in the occipital region, vertigo, vomiting, somnolency and stupor, and choked disk — were all present. But the most surprising feature is that no symptoms of involvement of the cerebrum were exhibited until the day before death, it was then only that the patient had convulsions. Another point of interest is the fact that the cancerous disease did not reappear either in the breast, lung, or axilla. It is also worthy of mention that the disease in the cerebellum was on the same side as the affected breast. Nothing positive can be deduced from this, however, because there was also a tumor in the left hemisphere. The most excruciating pain — that radiating from the occiput to the right eye — was on the same side as the disease. It is interesting to note that an operation would have been entirely useless if it had been performed, on account of the involvement of the left hemisphere; the growth here, it will be remembered, gave absolutely no symptoms until the day before death.

**NOMINATIONS FOR OFFICERS OF THE ROYAL SOCIETY.** — Sir Joseph Lister has been nominated by the retiring President and Council for election as President of the Royal Society. The election will take place at the anniversary meeting on November 30th. Professor Michael Foster has been nominated for re-election as one of the Secretaries, and among those nominated for election as members of Council are Sir Joseph Fayrer and Dr. W. H. Gaskell.

## LUPUS ERYTHEMATOSUS TREATED INTERNALLY WITH PHOSPHORUS.

BY H. L. JENCKES, M.D., GALENA, ILL.,  
Member of the American Medical Association.

We have very little positive knowledge of the nature and cause of lupus erythematosus. It is comparatively a rare disease, occurring only, according to the reports of the New York hospitals, 97 times in 20,798 cases of miscellaneous skin diseases. The uncertainty of external treatment scarcely deserves mention, and in this paper reference to the internal treatment only will be made.

Mr. B. consulted me some four years ago for a diseased condition of the skin of the left cheek. At that time there was a dull red patch the size of a half-dollar, which he said was gradually enlarging. It was partly covered with thin, adherent fine scales. It was not painful, but at times the itching sensation was quite annoying. This patch, with its sharply circumscribed outline, its surface studded with plugged sebaceous openings, and adherent fine scales, seemed a typical patch of lupus erythematosus. The usual methods of external treatment were instituted, and were faithfully carried out for five or six months. During this time the diseased surface had considerably extended, and Mr. B. concluded, as he had received no benefit, to stop treatment.

Although the disease continued to gradually extend, it was about a year before he again began treatment. And during the next two years he was treated by several physicians, one of them quite a competent man, but, as he says, "without benefit." The disfigurement and annoyance were now very great.

He consulted me again in February, 1895. The lesions at this time involved most of the left cheek, the whole of the nose, and nearly half of the right cheek. The tendency to peripheral extensions had been a marked characteristic of the disease from the beginning. This dull-red and infiltrated surface was tender to pressure, and at times painful. A number of careful examinations differentiated the disease from that tubercular disease of the skin described by Brocq as "erythematoïd lupus vulgaris." From lupus vulgaris it was distinguished by the absence of ulcerations so commonly seen in that disease, and by the absence of the small yellow nodules. These nodules, although carefully searched for at different times, could not be found.

All external treatment was now abandoned, and the patient was given a solution of phosphorus prepared as directed by Professor Berkley in his article in the *American Journal of the Medical Sciences* for April, 1893, namely:

R Phosphorus	:	:	:	:	:	gr. vi
Absolute Alcohol	:	:	:	:	:	3 xxx
To be dissolved with the aid of heat and agitation, and then mixed, while still warm, with the following mixture, also warm:						
Glycerine	:	:	:	:	:	3 lxxx
Alcohol	:	:	:	:	:	3 lxx
Essence of peppermint	:	:	:	:	:	3 ss

Each drachm contains one-twentieth of a grain of phosphorus.

Of this, twenty drops were at first taken in water three times daily, after meals. The dose was gradually increased until at one time he was taking forty drops after meals. This amount did not produce any gastric disturbance, but the large doses were only taken for a short time. After taking the remedy for a few weeks, he noticed that the burning and tender-

ness were gradually disappearing; and as the color began to fade, he frequently remarked, "Ich glaube sic haben die recht Arzenein gefunden."

At the end of the second month of treatment the improvement was very noticeable. The dull-red color, which heretofore was so noticeable, was gradually disappearing. At the end of five months of treatment the improvement was so great that he considered himself cured. The red, inflamed, and infiltrated conditions had disappeared. The integument over the diseased area had assumed quite a healthy appearance, although in places it was somewhat scarred. The livid line of demarcation which had separated the diseased from the healthy skin was no longer perceptible.

After several years of ineffectual external treatment the lesions yielded to the internal administration of phosphorus.

In the article previously referred to, Professor Berkley states, that chronic cases of lupus erythematosus seem as much benefited by this treatment as do acute cases.

I have made no attempt in this paper to discuss the nature of lupus erythematosus; but, judging from the well-known action of phosphorus on the nervous system, I am led to believe that the lesion is of neurotic origin. In administering phosphorus the action of the remedy upon the digestive organs should be carefully watched; and if unpleasant symptoms arise, they should be promptly met by appropriate treatment.

#### FATAL CASE OF ACUTE ALCOHOLIC POISONING IN A CHILD.

BY WM. H. DEVINE, M.D., SOUTH BOSTON.

SEPTEMBER 24, 1895, I was summoned to attend M. M., age four.

The history is as follows: That morning at 5.30 the father, while preparing to start for his daily work, noticed his little girl playing with a bottle of whiskey which she had obtained from the shelf of the mantelbed in which she was sleeping. On taking the bottle away, he noticed a strong odor of liquor from her; that her face was flushed, etc. In a short while she sank into a stupor. The father examined the bottle, and allowing for a small amount previously used, he thought the child had taken about two ounces. Not anticipating any serious results from the occurrence, he went to his work, but was summoned in a few hours by a messenger, who stated that the child had been unconscious since his departure. On returning to the house, he sent for me; but as I was not at home, Dr. W. J. Gallivan was summoned, pronounced it a case of acute alcoholic poisoning, and gave appropriate treatment. When I saw the child at 1.45 P. M., she was in a deep stupor—pulse 120, respiration 40, and the skin warm (temperature not taken). An examination, two hours later, revealed signs of pulmonary edema—pulse 160, respiration 60, temperature 106°, cyanosis. The child died at 3 A. M., twenty-two hours after the fatal dose was ingested.

The interesting points in connection with the case are, the small amount of alcohol taken and the rapid progress to fatal termination with pulmonary edema. In this connection it is well to consider the importance of carefully watching the dose and effects of alcohol in children, particularly in chest cases, as an overdose

might produce pulmonary edema, and cause an unfavorable termination in some of these cases.

The treatment consisted of enema of hot water, hot mustard foot-bath, ammonia carb. (one-half a grain), tinct. digitalis (three minims once in three hours), also a mixture of spirits æth. nitros and liq. ammon. acet. No emetic was given, for the child was not seen by the physician till five and one-half hours after the poison was taken, and it was then absorbed.

### Medical Progress.

#### RECENT PROGRESS IN LARYNGOLOGY.

BY A. COOLIDGE, JR., M.D.

##### THE VASCULAR MECHANISM OF THE NASAL MUCOUS MEMBRANE.

WRIGHT<sup>1</sup> describes the histology of the blood-supply of the erectile tissue of the turbinates and its relations to certain pathological processes. There are no specially adapted muscles to compress a few veins, as in the penis, and there is no tunica albuginea to exert compression. The various elements of the nasal mucous membrane are supplied with a large amount of muscle fibres, even the smaller arterioles, and especially the veins, showing well-developed muscular tissue in their walls, while the areola tissue in the neighborhood of veins and sinuses, is also supplied with it. The radial arteries and veins pass through various bony canals into the nose. The artery will evidently compress, when dilated, its accompanying vein against the bony walls. There is a similar mechanism where the arterial branches and their veins lie in the deep or periosteal layer of the mucous membrane. Veins may also be compressed between the periosteal layer and the elastic fibres and glands external to it, by engorgement of superficial tissues. The distribution of the capillaries is such that there may be a transudation of serum to the surface directly from the vessels, especially in the olfactory region. A special network of small veins surrounding the mouths of the glands explains the phenomenon observed in cases of coryza, when the mucous secretion increases as the vascular tension relaxes.

##### MICRO-ORGANISMS IN THE HEALTHY NOSE.

Thomson and Hewlett<sup>2</sup> published the results of their investigation to determine the number of micro-organisms found on the mucous membrane of the nasal cavity in health. Previous observers have differed on this question, and it is commonly thought that the healthy nose contains many micro-organisms. The authors conclude that in the dust and crusts of mucous and *débris* deposited among the vibrissæ in the vestibule of the nose, micro-organisms are never absent and are generally very abundant, but on the Schneiderian membrane the reverse is the case. In 80 per cent. of their observations no organisms whatever were found and the mucus was completely sterile. Occasionally they occur, but under normal conditions they are never plentiful, and the presence of pathogenic organisms must be infrequent. In making these observations great care is necessary to avoid contamination with the lining of the vestibule, even when this source of error has been realized. These observations indicate clearly the necessity of a thorough

<sup>1</sup> American Journal of Medical Sciences, May, 1895.

<sup>2</sup> Medico-Chirurgical Transactions, vol. lxxviii.



disinfection of the vestibule as a preparation for intranasal operations.

#### ETHMOIDITIS.

In a discussion on the surgical treatment of the accessory cavities of the nose, at the recent meeting of the British Laryngological Association, a short, concise review of the subject was given by Bosworth. The question of treatment deals with retained pus. The indications are to open the cavity, drain out the pus, and thoroughly disinfect. In the ethmoid cells we have to deal with a kind of honeycomb bone, a mass composed of a large number of cells, each of which constitutes a small cold abscess, which from a surgical point of view is to be treated. The indications are to open every one of the little cells and thoroughly disinfect them. The galvano-cautery involves great risks in this region. A hard, stiff spoon is not an efficient instrument, neither is a curette. The author prefers a burr driven by a dental engine. The anterior portion of the middle turbinate is first removed, and the cells then entered with a burr three-sixteenths of an inch in diameter. These cases do not always yield readily to treatment. It is a delicate work in a dangerous locality, close to the base of the brain and to the orbit.

Delavan<sup>3</sup> believes that, in general, suppurative disease of the ethmoid cells is usually caused by some acute process attended with blocking of their normal outlets. The disease consists in inflammation of the lining of the cavity, possibly from entrance into it of an infectious element. It cannot be too strongly urged that in case of severe coryza the earliest intimation of involvement of any of the sinuses should be taken in hand and attention paid to allaying the irritation and keeping the outlets of the sinuses as free as possible. In chronic disease of the ethmoid cells drainage and persistent cleansing are required. If necessary, the anterior portion of the middle turbinate bone must be removed. The removal of all polypi is of course essential. Having reached the orifices of cells, a thorough and persistent cleansing is in some cases sufficient to remove the trouble; if not, the cells themselves must be opened.

Bryan<sup>4</sup> mentions among the earliest symptoms of abscess of the ethmoid cells pain, neuralgic in character, referred to the bridge of the nose and extending outwardly along the infra-orbital ridge. The middle turbinate may or may not be enlarged. In simple cases the author prefers a sharp curette for the opening of the individual cells. In case the deeper or fronto-ethmoidal cells are involved we should not attempt to open them through the nose, but the case should be treated as one of frontal sinus abscess, of which this condition is a frequent complication.

#### THE PREVALENCE OF ADENOID VEGETATIONS.

The recent death of Dr. Wilhelm Meyer in Copenhagen, who originally called attention to the prevalence and importance of adenoid vegetations, adds additional interest to an article<sup>5</sup> written a short time before his death, on the geographical distribution and historical evidence of these growths. As these vegetations can be shown to be present in small amount in a very large number of children who exhibit no symptoms from them, the reported percentage of children with the disease in

any community must depend upon the individual observer. Dr. Meyer has received reports from distant parts of the world, and comes to the conclusion that a warm climate is less favorable to the development of the growth than a colder one. The Mongolian race is as subject to it as the Arian. It is prevalent among the children of the Esquimaux, the North American Indians, and the Chinese, but is not often found in the East India Islands. The historical evidence of its existence in the past is found in the statues and portraits in different collections, some of which show the characteristic facial expression. From these Dr. Meyer concludes that adenoid vegetations have probably existed since the early ages.

#### THE ETIOLOGY OF LACUNAR TONSILLITIS.

B. Fraenkel<sup>6</sup> contributes a paper on the etiology of this disease. It has been noticed that acute follicular tonsillitis occurs not infrequently after intranasal operation, especially when the galvano-cautery is used. When arising from this source it seems to resemble in all respects the spontaneous variety. This seems to suggest that something is carried by the lymph or blood circulation from the nose to the tonsils which starts up inflammation in the latter. The author believes that it is much more likely that tonsillitis arises from infection through the lymph channels from the nose or other region than that the exciters of inflammation make their way into the tonsils by the same route by which the leucocytes make their way out. It is generally accepted that chill may be the cause of a tonsillitis. This is probably due either to diminishing the resistance to the invasion of infection, or by producing primarily a nasal catarrh, which secondarily finds its way into the tonsils through the lymphatic vessels.

#### SIMPLE TONSILLAR ULCERATION.

Moure<sup>7</sup> describes an ulcer of the tonsil, resembling the deep punched-out ulcer of late syphilis, but not due to the infiltration of any specific disease. He has seen it especially in the spring and autumn, and in persons of from twenty to thirty years of age, often medical students. Although undoubtedly of microbic origin, the author has not been able to discover any bacillus which he considers the cause of the disease. He believes that it comes from the dilatation of one or more lacunæ, with ulceration of their walls and of the tissue which separates them from the exterior, forming an ulcer with a crater-like opening and irregular margins, without very diffuse inflammation or marked constitutional disturbance. It heals readily if it is kept clean. Its principal importance lies in the fact that it might easily be mistaken for an ulcerating gumma.

#### EARLY OPERATION FOR MALIGNANT DISEASE OF THE LARYNX.

In a discussion on the indications for early radical treatment of malignant disease of the larynx<sup>8</sup> Delavan reviews the question of how much can be gained by laryngectomy in suitable cases. The operation must be performed at the earliest possible period to promise the best results. In a suspected case the nature and situation of the growth should be determined as soon as possible. The history of the operation warrants the conclusion that the patient should not be too old, that he should be possessed of good vitality, and should

<sup>3</sup> Medico-Chirurgical Transactions, vol. lxxviii.

<sup>4</sup> American Laryngological Association, 1895.

<sup>5</sup> Hôpitals Tidende, No. 6, 1895.

<sup>6</sup> Section on Laryngology, British Medical Association, 1895.

<sup>7</sup> French Society of Laryngology, May, 1895.

<sup>8</sup> British Medical Journal, October 26, 1895.

not be suffering from any physical defect likely to complicate recovery; and that he be of a cheerful, courageous temperament. The growth should be located within the larynx and favorably situated for complete removal with the best outlook as to the possibility of non-recurrence. The question of partial or total removal of the larynx cannot as yet be said to be definitely settled.

Butlin<sup>9</sup> describes the operation of thyrotomy, which he has done twenty-eight times for malignant disease. The dangers of exploratory thyrotomy and of thyrotomy with removal of intrinsic carcinoma are singularly light. An operation is advisable in cases of carcinoma of intrinsic origin if it is of limited extent, especially if the arytenoid region is not involved, and in which the lymphatic glands of the neck are not affected.<sup>10</sup> Great care must be taken in the after-treatment. No dressing is inserted into the interior of the larynx. The head should be kept low and the patient on his side. On the next day water or other fluids are taken into the mouth and an attempt is made to swallow, which is generally successful.

#### NODES OF THE VOCAL CORD.

As a result of the study of twenty cases, Haring<sup>11</sup> calls attention to the relation between these nodes and relaxation of the cords, due to fatigue. In many cases of voice-strain he has noticed that the free edge of the cords are bent inwards in phonation, so that the convexities present towards each other and touch at a point anterior to the middle of their length; the position in which nodes are commonly found. In almost all cases there is a history of excessive and often faulty use of the voice, occurring most frequently in singers. Of twenty cases, sixteen were females and fifteen between eighteen and twenty-two years of age. The principal symptoms were impairment of the singing voice, and fatigue in speaking. The author believes that in overstrain of the voice the crico-thyroid muscle is the first to suffer, and that in its weakened condition it cannot fully antagonize its opponents, and thus, instead of being kept straight, the edge of the cord is allowed to bulge toward the median line. If there is much use of the cords in such a condition, the mechanical impact would be sufficient to cause a node.<sup>12</sup>

In the discussion of a case presented by Dr. Dundas Grant<sup>13</sup> of hoarseness in which no abnormality was seen except loose vibration of the inner portion of the cords in the lower register, Dr. Wolfenden suggested that this was the condition in which little fibrous nodes are often found in the anterior portion of the cords. These nodes are due to excessive forcing of the voice generally accompanied by a faulty vocal method. Dr. F. I. Knight<sup>14</sup> in a review of this subject calls attention to the imperfect nomenclature of this affection. The treatment demands rest for the voice for a more or less prolonged time. In a few cases the nodes have been excised, but less radical local treatment, the application of astringents and caustics, are generally recommended.

#### NIGHT AIR.

In his presidential address, Roe<sup>15</sup> protests against

<sup>9</sup> Loc. cit.

<sup>10</sup> For the details of this operation see page 1,025 of the *British Medical Journal*, October 26th.

<sup>11</sup> *Manchester Medical Chronicle*, February.

<sup>12</sup> *Journal of Laryngology*, May.

<sup>13</sup> *British Laryngological Association*, January 11.

<sup>14</sup> *Transactions American Laryngological Association*, 1894.

<sup>15</sup> *American Laryngological Association*, 1896.

the indiscriminate practice of sleeping with windows widely open. The relation of damp air and sudden changes to diseases of the air-passages has long been recognized. A warm humid atmosphere is often beneficial, while a damp air is to be avoided. Cold air must be dry in order to be advisable in diseases of the respiratory tract. A person while asleep is no less susceptible to climatic influence than when awake. Many persons notice in the morning trouble in the air-passages which could be accounted for by too great exposure during the night. The climate of the region of the Great Lakes is a damp one, especially in the spring, and at night. In this region also diseases of the nose, throat and lungs are more prevalent than in other localities. A careful regulation of the atmosphere in which a patient sleeps may remove the cause of persistent trouble.

### Reports of Societies.

#### AMERICAN DERMATOLOGICAL ASSOCIATION.

NINETEENTH ANNUAL MEETING, WINDSOR HOTEL, MONTREAL, CAN., SEPTEMBER 17-19, 1895.

#### PRESIDENT'S ADDRESS.

DR. S. SHERWELL of Brooklyn, welcomed the members and congratulated them on the certain success of the meeting, due to the number of papers and subjects on the programme and the full attendance. He gave a statistical exhibit of the disparity and excess of the alien element, seeking relief for skin affections in hospital and dispensary practice. He had examined and collected several thousand cases which showed a large preponderance of foreign born and children born here of foreign parents (and thus almost as much to be considered aliens as though born abroad). The subject of constitutional treatment in diseases of the skin was then discussed and the views of Pye-Smith, Crocker and Malcolm Morris, as expressed in the last meeting of the British Dermatological Association, were in a great measure substantiated, favoring such internal treatment to be carried out coincidentally with local measures.

In making suggestions for the future work of this Association, which must be considered as a sort of Supreme Court for matters dermatological in this country, he thought subjects of high scientific interest should be chosen.

DR. FORDYCE, of New York, related a case of

#### LUPUS ERYTHEMATOSUS DISSEMINATUS,

in which the lesions were situated upon the hands and arms. The patient was a young woman, and during pregnancy the spots disappeared, leaving in their place atrophic scars surrounded by a pigmented zone. In a second case which he had observed the eruption likewise disappeared under the same conditions, but returned in an equally severe form after confinement.

#### RAYNAUD'S DISEASE OF THE EARS

was described by the same reader in a man of thirty-nine years. There was a suspected syphilis, from the history. The ears had become suddenly cold and blue on a warm day, and had remained so for several hours, gradually resuming the normal color. During six months such attacks were frequent, and the ears finally became permanently bluish-black. A gangren-

ous patch formed over an area of half an inch in diameter. The process was followed by cicatrization, and the blue color disappeared. The condition was explained on the theory that with syphilis as an etiological factor the arterial coats were implicated, leading to obstruction in the vascular supply, and an element of vascular spasm due to cold or other cause being added, the congestion and gangrene followed.

DR. BRONSON questioned the advisability of including this case under Raynaud's disease, in which the clinical picture is fuller and the disease a more general one. In gangrene about the face he always looked for syphilis. It seemed not improbable that here a neuropathic condition originating in syphilis had been the cause of the trouble.

DR. WHITE thought the localization did not preclude the idea of its being Raynaud's disease. He had seen a case affecting both the fingers and portions of both ears, but never had seen it affecting the ears alone.

DR. SHERWELL thought a syphilitic history was usually obtainable. At times the ears were disposed to the same changes observed in the fingers. He had found antisiphilitic treatment of benefit, and related one case thus cured.

DR. FORDYCE said, in closing, that the term Raynaud's disease is a general one including endarteritis and other pathological conditions. Raynaud's original monograph did not discuss the pathology.

#### ANGIOKERATOMA OF THE SCROTUM

was the title of a paper by the same author.

A patient, sixty-six years of age, was described, who showed upon the scrotum a number of dark-purple, spherical tumors, varying in size from a pin's head to several times this size, slightly elevated and covered with a slightly thickened horny layer. There were no subjective symptoms. The lesions seemed to consist of lacunar spaces filled with blood, these occupying the papillary portion of the derma. The reader's investigations lead to the belief that the primary change is vascular. The blood spaces in the rete Malpighii he believes are caused, as Pringle claimed, by a downward growth of the cells of the layer, producing a constriction of the terminal loops and their resulting distension.

DR. MORROW said he had had two cases clinically identical with this during the year and believes they were pathologically identical as well. He thinks the designation correct.

DR. WHITE did not think the keratomatous element very marked as shown in the illustrations.

DR. ZEISLER thought it natural that in what we might call a new disease, additional features to those first described, might be subsequently discovered and added. His own cases, which corresponded to the typical ones of Mibelli, differed somewhat from this. He thought a somewhat stronger development of the horny layer should be present to wholly justify the name. Wherever stagnation of the blood exists we have the element which favors the production of keratoma.

DR. SHEPHERD said he had often noticed in varicose veins of the scrotum an enormous vascularity of the skin. He believed the condition described by the reader was a varix.

DR. FORDYCE said he did not think the condition could be compared to varix of the veins, but was rather

a varicose condition of the papillary capillaries. The essential condition upon which stress is laid by previous observers is the existence of blood spaces in the epidermis. If the keratomatous element is not considered essential, then this case must be considered one of angiokeratoma, in spite of the slight development of the horny layer at some points.

DR. GRAHAM, of Toronto, then read upon

#### HYDROA ESTIVALE,

on a rare affection of the exposed parts due to direct or reflected sunlight. Two cases were reported. In one a limited number of small red spots appeared upon the face and hands, and recurred as often as the young girl went out into the daylight. The lesions became vesicular and then pustular, and finally these became black in the centre and showed umbilication. Crusting then took place, and scar tissue resulted. When gloves were worn the hands remained free. In the second case, a blond girl suffered from burning sensations, swelling, and vesicular eruptions whenever exposed for twenty minutes or more to the direct rays of the sun. The other symptoms were coryza, malaise, insomnia and anorexia during the attack. In this case the direct sunlight was not essential, since sitting near an open window produced the same results. The term hydroa vacciniforme does not apply to all cases, and the designation estivale seems the better one. It is not only the ultra-violet rays, the reader thought, which exert an injurious effect upon the skin of some persons, but also the heat rays; but their mode of action in producing so deep an effect as to leave scarring is not readily explained. We have to invoke the influence of the vaso-motor nervous system, and explain it by reflex action. The amount of destruction of tissue by necrosis will depend upon not only the individual vulnerability as regards the tissues, but upon the length of exposure of the parts to the injurious influence. A covering of the part in such a way as to exclude the light was almost always effectual.

DR. ZEISLER had seen such results of the sun's action. He had recently observed a case which recurred after every exposure. A second case had been under observation this summer. He did not see the necessity of calling these cases hydroa, or of classifying them under a new title. He regarded them as a form of erythema multiforme. Atropine was suggested as a drug to try.

DR. WHITE regarded the condition as a dermatitis, and not as a specific individual affection. The type is not maintained absolutely in successive attacks.

DR. BOWEN had made an histological examination in one case, where the inflammation was formed by necrosis and umbilication and found the necrosis extending to the corium. Erythema multiforme is never followed by a scar. In his case the boy looked as though he had had the small-pox.

DR. HARTZELL spoke of a case occurring in warm weather without exposure to the sun. The only difference between it and the other cases was one of degree, the inflammation not being sufficient to cause necrosis.

DR. PHILLIPS, of Toronto, who had treated one of the cases reported by Dr. Graham, spoke by invitation. He had employed soothing and protective dressings for the most part. He had thought to exclude the violet ray by a solution of bisulphate of quinine

incorporated with a bassorin paste or to annihilate the blue, indigo and violet rays of the spectrum by covering the exposed parts with a thick yellow paste. He hoped these experiments when completed would throw light upon whether the disease really resulted from the effects of the chemical rays.

DR. JACKSON referred to the case of a boy of ten years who had shown this sun rash for six or seven years upon the face and hands, followed by pitting and scars. The patient seems to suffer more in winter, especially on bright days, corresponding to Bowles's cases in Alp-climbers, in whom, too, he uses a brown ointment with success.

DR. SHEPHERD had seen the affection in a fellow-traveller in the Alps, and within the past two weeks had seen a girl in Montreal who had suffered for three years. Exposure to the open air was sufficient to cause swelling of the face and bullæ, which would be followed by scarring.

DR. ALLEN had also seen such cases. He was very familiar with the appearance of Dr. Jackson's case, having frequently watched the changes in the boy's appearance, though he had never treated him. He believed there were certain rays of light which produced peculiar effects upon the skin and in those predisposed the protective method is the only rational one.

DR. SHERWELL recommended a yellow veil or some similar device, for covering the face, and thus making a virtual developing chamber of the part.

DR. GRAHAM was pleased to hear of Dr. Bowen's investigations which made the deep-seated necrosis characteristic of the condition and excluded any idea of erythema. Whether the superficial character of the lesions in some cases depends upon the individual or the amount of exposure is uncertain, but he believes it due to the individual. He thought perhaps the term dermatitis solaris would be the best under which to include all cases. It occurs in women later in life than in men, and is very persistent.

DR. JACKSON, of New York, read the next paper, on

#### BROMIDE ERUPTIONS.

Two cases were reported. In one, which related to a young woman, chicken-pox-like lesions appeared upon the forehead and spread over the body. Crusts formed, especially on the scalp, and under them a raspberry-like growth took place. In the second case the lesions at first looked like impetigo contagiosa, but were followed by the same fungating lesions. Upon the legs these broke-down into indolent, irregular ulcers. The point of interest is the long interim between the cessation of the drug and the appearance of the eruption.

DR. HYDE referred to the similarity between the colored plate shown by Dr. Jackson and that representing a single lesion, which accompanied Dr. Tilbury Fox's original paper on the subject. He thought this effect of the bromides was seen chiefly in young subjects and cachectic individuals. He never saw it in the healthy. He doubted if this form of lesion is peculiar to bromides. He had seen iodide eruptions present quite the same characters and was prepared to believe that other drugs might act in the same way in subjects with sensitive skin who were in poor health.

DR. MORROW agreed with Dr. Hyde that the severe forms were liable to be seen in children prone

to vascular disorders from slight cause. The continuance of the eruption after the cessation of the drug is opposed to our knowledge of drug effects. As a rule, eruptions have a tendency to disappear almost immediately after the drug is discontinued and the instances in which the eruption continues for several weeks are difficult of explanation.

DR. WHITE expressed surprise that Dr. Hyde thought the health of the individual had anything to do with the eruption; it was in his opinion the result of individual idiosyncrasy. He had never seen any such eruption as Dr. Jackson described result from other drug than iodides or bromides. He had seen an infant affected by the milk where the mother was taking bromides.

DR. HARTZELL referred to the frequency with which these severe effects were associated with valvular disease of the heart.

DR. FOX had first thought Dr. Jackson's case one of hereditary syphilis. Some syphilides resemble the bromide eruptions seen in adults. [He presented a photographic slide to illustrate the great similarity.] Mistakes are likely in children known to be syphilitic who have been given the bromides. The drug might evoke the cutaneous syphilis.

DR. GRAHAM spoke of the confusion arising from wilful, careless or intentional faulty history as to bromides having been administered.

DR. ALLEN had seen the bullous form of iodide eruptions assume this fungating appearance and closely simulate that due to bromides. The eruption may persist long after the drug has been stopped. This can scarcely be accounted for by irritation of the skin due to elimination. In his paper last year he had dwelt upon this persistence after minute doses of quinine. He thought the small quantity of other drugs sometimes given forced us to account for the persistence of lesions by reflex nerve influence, and possibly, as he had suggested for quinine, by central nerve change in some cases.

DR. SHERWELL said a few years ago such exaggerated types of lesion would be called yaws or the like. He mentioned cases surely due to the iodide of potassium which were almost identical with those from the bromide. A bromide eruption recently treated, not only persisted, but grew more intense several weeks after the drug was stopped.

DR. HYDE mentioned hydriodic acid as a drug whose use had been followed by lesions similar to this case, as reported to him by a fellow physician. He had personally no direct knowledge of other drugs than the iodides and bromides being at fault, but believed there might be such.

DR. MORROW thought the history of cases which persisted was too vague. He saw no reason why a drug eruption should continue to appear.

He would ask Dr. Hyde whether he believed it was due to accumulation of the drug in the system. He had found long-continued administration necessary to produce the nutritional changes in the tissues. Iodine applied externally, on the other hand, may produce an eruption within twenty-four hours. Here we have a purely neurotic phenomenon, and not trophic changes, as are probable in the other case.

DR. HYDE said drug eruptions quickly subside after the drug is withdrawn, but this particular form differed and should be placed by itself. There is usually some underlying disease for which the bromide is prescribed.

DR. JACKSON, in closing, said that since writing his paper he had seen a young woman who presented bromide lesions weeks after the drug was stopped. This was usually not due so much to the appearance of new as to the persistence of old lesions.

(To be continued.)

### Recent Literature.

**Modern Materia Medica.** With Therapeutic Notes for the Use of Practitioners and Students of Medicine. By DR. OTTO ROTH. Seventh edition, revised by DR. GREGOR SCHMITT. New York: William Wood & Co. 1895.

This volume is a translation of the seventh edition of this work a translation of an earlier edition appearing some years ago. Nearly three-quarters of the book is devoted to materia medica, and many of the recent drugs described are not mentioned in the last edition of the U. S. Pharmacopœia; but, on the other hand, some of the remedies given in our pharmacopœial list are omitted. The therapeutic notes form a separate portion of the work, and although not complete, offer many suggestions of value. The book is among the good ones of the kind, but not of the highest rank. The publishers have spared no pains to make the volume serviceable and attractive.

**A German-English Medical Thesaurus, or Treasure of Single and Compound Medical Words and Terms.** With Dialogues, Idiomatic Phrases and Proverbs, etc., and German and English Indexes for Physicians and Medical Students. By REV. HENRY LOSCH, M.D., author of "Improved Method and Complete Manual for the Systematic and Practical Study of the German Language," etc. Philadelphia: Published by the Author. 1895.

This dictionary, which in general gives excellent English definitions of German medical terms, possesses the fault of a most peculiar arrangement, the advantages of which are perhaps evident to the author but difficult for the general reader to fathom. The arrangement of the terms according to a peculiar system in which the various parts and conditions of man are taken up in an arbitrary order, makes it impossible to find any given term without looking it up in the index at the back of the book. If the terms had been arranged in alphabetical order, as in all other dictionaries of which we have cognizance, this difficulty which detracts immensely from the value of the book would have been obviated. The German and English Indexes contain 20,000 words.

**Lindsay and Blakiston's Physician's Visiting-List for 1896.** Philadelphia: P. Blakiston, Son & Co.

This well-known visiting-list presents several improvements in the new edition for 1896, and the reading matter and memoranda pages have been rearranged and simplified. The lists for 75 patients and 100 patients will also have special memoranda pages and hereafter will come in two volumes only, dated January to June, and July to December.

The tables of doses, and directions for emergencies in the beginning of the book are carefully made up, and contain a great deal of valuable information in an extremely compact form.

The book is excellently adapted to its purpose.

THE BOSTON

## Medical and Surgical Journal.

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### THE PRESENT STATUS OF SEROTHERAPY.

At the Sixth Congress of the Italian Society of Internal Medicine held at Rome, October 22d to 25th, the present status of serotherapy was discussed by Pio-Foà of Turin, Maragliano of Genoa, Petrone and Fazzo of Naples, Campana of Rome, and other eminent bacteriologists and clinicians.

Maragliano claims to have experimentally obtained an antitoxic serum which possesses curative efficacy in tuberculosis, and which is giving good results in his own practice and in that of several of his *confrères*; the mode of preparation of this serum will eventually be published, though he is unwilling to make it known at present, though derived, as he says, "from animals vaccinated with all of the toxins contained in the virulent cultures, both those that resist and those that do not resist heat." Campana, of Rome, affirms his belief that Maragliano's serum is nothing but Koch's tuberculin, improved. As a dermatologist, he declares that this lymph in tuberculous affections of the skin favors the resorption of morbid infiltrations, but does not cure the tuberculous processes, and the same affirmation applies to tuberculosis of internal organs.

Fasano, of Naples, reported a case of pulmonary phthisis which seemed to have markedly improved under the use of this serum. Marrani, of Rome, has treated with benefit twelve cases of tuberculous broncho pneumonia with Maragliano's serum. The results were, disappearance of the fever, of the râles, of the cough, of the dulness, a gain in spirits and in appetite, and increase of weight. Ascenzi, of Rome, and Argento, of Palermo, communicated — the first three, the second five — cases of tuberculosis treated with success by Maragliano's serum.

With regard to the serum treatment of diphtheria, Mya, of Florence, stated that he had treated 112 cases of diphtheria at the clinic of children's diseases with Behring's antitoxin; the results were 22 deaths and 90 recoveries. In a first series of 51 cases, he had to do with diphtheria of the pharynx and larynx; there

were 15 deaths, giving a proportion of 29.4 per cent. (under the old treatment he used to have in these cases a mortality of 50 per cent.). A second series of cases comprehends 43 cases of simple diphtheria of the pharynx, with 7 deaths and 36 recoveries. In a third and last series, there were 18 cases of pharyngeal diphtheria with beginning of extension to the larynx; all these recovered rapidly. In all these cases the diagnosis was controlled by the bacteriological examination.

Mya is in the habit of injecting daily during the first three days of the sickness ten cubic centimetres of serum. In fatal cases he has often observed want of success to coincide with a notable degree of hypertrophy of the glands; the autopsy has disclosed along with grave alterations of the lymphatic system, fatty degeneration of the viscera. He is persuaded that if one would have recourse with success to serotherapy in diphtheritic cases, there must be relative integrity of the lymphatic system. Another group of cases in which serotherapy proves inefficacious includes those forms of diphtheria in which the exudate invades very rapidly the whole respiratory tract, that is, not only the larynx and trachea, but also the bronchial tubes. It is principally in the coldest months of the year that he has observed cases of this kind.

Maragliano, in summing up the diseases in which serotherapy has been employed with more or less of success, remarks that in streptococcus infection (notably in erysipelas and puerperal septicemia) the serum treatment has already produced sufficiently encouraging results to warrant further trials.<sup>1</sup>

No success has followed attempts to similarly treat typhoid fever and cholera, that is, by the usage of a serum obtained from patients recovered from the disease, or from immunized animals.

In tetanus, the results obtained with serums obtained from animals immunized by attenuated toxins have not been remarkable. In 30 cases so treated, there have been 13 recoveries.<sup>2</sup>

Maragliano sums up the statistics of serotherapy in diphtheria by citing Heubner's figures: in 3,036 cases there was a mortality of 20.6 per cent; this is contrasted with a mortality of 38.8 per cent. before the usage of antitoxin. He thinks that "the enthusiasm aroused by the discovery of Behring has been justified by the splendid results obtained in practice."

With regard to the serum treatment of pneumonia, there is little to add to the results obtained some time ago by the two Klemperers, and by Fowliaky and Emmerich; the Klemperers, in particular, claiming remarkable clinical success in several cases with their "antipneumotoxic serum." Pio-Foà, who was referee at the meeting of the Congress aforesaid, has been making numerous experiments on animals with a serum of his own preparation, which he calls an "antipneumococcic vaccine." He first tried glycerine extracts of infected blood, the glycerized extracts of

the bodies of bacteria remaining on the filter, the precipitates obtained with sulphate of ammonia, etc. After having found out the complete inefficaciousness of the chemical vaccinations, with the exception of the filtrate of the *meningococcus*, he tried to obtain a vaccine prepared according to Pasteur's methods (attenuated by heat, by oxygen, by light, etc.). He finally obtained the desired attenuation by means of Lugol's solution, and by employing the method of intravenous injection, he now succeeds in vaccinating hares against the different varieties of diplococcus lanceolatus, so as to cause them to support with impunity 160 cubic centimetres of a culture sufficiently virulent to kill the test animals in a few hours, the duration of the immunity seems to be quite long, that is, three months at least.

The experiments which Pio-Foà related, where hares, dogs, sheep and goats are rendered refractory to the pneumococcus infection were of great interest and warrant hope that the serum treatment may yet be found to be of unequivocal benefit in the pneumococcus diseases of man. Foà found that when both the diplococcus and the serum were injected at the same time, the animal survived, and when the serum was injected five hours after the infection, the symptoms were light and the animal soon recovered; which indicates that the serum also exercises a curative action.

#### RESUSCITATION AFTER SUBMERSION.

In answer to the inquiry of our correspondent, Dr. H. Hunt, whose letter we publish on page 555 of this issue of the JOURNAL, with regard to the length of time after which it is possible to hope for success in efforts at resuscitation after drowning accidents, we would say that a hasty review of the literature of the subject shows that cases of recovery are rare after submersion of three to five minutes. Cases have been reported of successful resuscitation after ten to fifteen minutes, but the circumstances attending such accidents are generally such as to preclude the possibility of an accurate record of the time of submersion being made. The time must be roughly estimated by computing the number of minutes which must have been required for the rescuers to get to the patient, raise him from the water, and transport him to the place where efforts at resuscitation can be begun.

In a number of cases in which the patient is believed to have been submerged for ten to fifteen minutes there has been found evidence that he was in a state of syncope or concussion from a blow on the head, chest or abdomen, so that active respiratory movements did not take place while he was under water.

In this connection, we may cite the case reported by Pope<sup>1</sup> in which the patient was knocked on the head, and expansion of the chest was prevented while under water by weights which lay upon him. This

<sup>1</sup> See this Journal, cxxxii, p. 444.

<sup>2</sup> See also this Journal, vol. cxxxii, p. 287.

<sup>1</sup> Lancet, London, 1881, II, 606.



patient is believed to have been resuscitated after being under water from twelve to fifteen minutes.

Dr. J. Mason Warren<sup>2</sup> reports the case of a young woman whom he was successful in resuscitating in which ten minutes are believed to have elapsed before she was gotten out of the water, and twenty minutes before artificial respiration, etc., was begun. The young girl was a passenger on a train which plunged off the bridge into the river at South Norwalk, Conn. After the accident sufficient time elapsed for a boat to put out to the middle of the river, a hole to be cut with axes in the side of the car, and the mother of the young woman, whose head was not under water, to be pulled out, before she was reached. In this case, although it is extremely probable that ten minutes were required before the patient was taken out, it is possible that she may have been stunned by striking her head against the side of the car or a seat as the car went down, or may have fainted from the alarm of the accident. It is also possible that the water which poured into the car did not reach the level of her head until just before the rescuers reached her.

The case reported by Burrall<sup>3</sup> shows the methods to which it is necessary to resort in estimating the probable time of submersion. In this case, which occurred at one of the seaports on the Maine coast, a man was seen to sink, by two men who were at a distance of 250 paces from the shore. They ran to the shore, spent a moment in deciding not to swim for him, one of them pulled off his boots and trousers and waded a short distance out to a row-boat, which he brought to shore, and then took the other man in. He rowed him out to a yacht which was anchored 240 yards from shore, unlocked the cabin door, which was padlocked, secured a boat-hook, and rowed to the spot where the man was seen to sink. He was seen lying on the bottom in nine feet of water, and fished out with the aid of the boat-hook. His head and shoulders were dragged into the boat, and with the legs hanging over the stern he was rowed rapidly to shore, and rolled over a few times before Dr. Burrall, who had been sent for in the meantime, reached him and began artificial respiration. It would seem as if fully ten or twelve minutes must have elapsed before the active work of resuscitation was begun. Dr. Burrall was not able to record the exact length of time after the artificial respiration was begun until the first voluntary respiratory movement took place. It was necessary, however, to keep up artificial respiration for three-quarters of an hour.

Such cases as the above are, however, the rare exceptions, and the statement made in Wharton and Stillé's "Medical Jurisprudence" that a submersion of three to five minutes generally places the patient beyond hope of revival, is probably correct.

According to Harley,<sup>4</sup> dogs kept under water one and a half minutes always died, if water had entered the lungs. If the entrance of air had been prevented

by plugging the trachea, they survived a submersion of four minutes.

With regard to the time during which artificial respiration should be kept up, the rule generally laid down in emergency lectures on the subject is that if no flutter of respiration has appeared after an hour's work, and no heart beats can be heard, further efforts are useless.

#### MEDICAL NOTES.

**AN EXPLORING TRIP UNDER THE DIRECTION OF TWO MEDICAL MEN.**—Dr. William H. Furness, 3d, and Dr. H. M. Hiller, both members of the class of 1891 of the Medical Department of the University of Pennsylvania, have started for the South Sea Islands, where they will spend at least a year in collecting ethnological and archeological specimens for the University. Should the field prove fruitful, it is probable that their stay may be prolonged to two years. After arriving at San Francisco they will sail for Yokohama, touching at Honolulu. They will proceed to Singapore, and from there will take passage for the Philippine Islands, visiting other groups of the East Indian and South Pacific Archipelagoes in a chartered vessel.

**AN UNDERGROUND CITY.**—There is said to be a community of one thousand people, all miners, men, women and children who live in the bottom of one of the rock-salt mines at Wieliczka in Galicia at a depth of several hundred centimetres. The galleries of the mines extend underground to the length of 82 kilometres, and the miners have there their houses, a town-hall, club-rooms and even a theatre. Their entire life is spent in these underground streets and squares, which are lighted by electricity. Families are to be found there, the members of which have not mounted to the earth's surface for several generations (?). The little church of Wieliczka, with its statues sculptured of rock salt, is one of the most wonderful structures, architecturally, in Europe. The inhabitants are happy and long-lived, preserved as it were in salt. The continuous labor at mining salt does not seem to undermine their constitutions, a fact which is a remarkable testimony to the preservative powers of salt, and the romancing ability of the author of the story about generations never having seen the sunlight.

**THE MIGRATION OF THE FLEA.**—E. W. Forster in a letter published in the *British Medical Journal* of October 26th, relates an experience illustrative of the methods by which the Madagascar chigoe, or jigger, invaded East Africa, a region which was not at the time of this experience (1875) a chigoe-infected district. He writes: "Whilst sauntering in the early morn along a native track about eighteen miles inland, my attention was attracted by a curious agitation across the pathway, as if a stream of living dust was being driven out of the dry and dusty jungle. A nearer approach and examination proved the phenomenon to be a migratory movement of fleas. The column of these *aphaniptera* was about two feet in

<sup>2</sup> Surgical Observations, Boston, 1867, 598-600.

<sup>3</sup> Medical Record, 1891, xi, 208.

<sup>4</sup> Potter's Materia Medica, Pharmacy and Therapeutics, 881.

breadth, and consisted of an innumerable host rapidly traversing both the ground and air by characteristic leaps and bounds. I watched the onward and regular procession of this mighty swarm for a quarter of an hour, and left the formidable multitude undiminished in numbers, and apparently under orders for a neighboring village."

**THE FIRST OPERATION UNDER ETHER IN ENGLAND.**—In an excellent editorial on Sir Edwin Arnold's address to the students at St. Thomas's Hospital, the *Lancet* calls attention to the fact that the advance of our art which most appeals to him is the discovery of anesthetics. The spirit in which the discovery was welcomed in England is well illustrated by the account given by Sir Russell Reynolds at University College Hospital dinner in 1888, of the first operation performed in England under anesthesia: "The first operation in this country performed under an anesthetic was witnessed in University College Hospital. Liston had consented to try the anesthetic. I can see him now as he said to the students, 'Gentlemen, we are going to try a Yankee dodge for making men insensible.' . . . At length Peter Squire said, 'He is quite ready now, sir.' Liston's knife flashed in the air; I took out my watch to count the time, and the leg was on the floor in six-and-twenty seconds. Liston turned to the students and said, 'This Yankee dodge, gentlemen, beats mesmerism hollow.'" And the *Lancet* remarks: "That was all the welcome given to the first use of anesthetics in England. There was no public rejoicing, no Thanksgiving Day, no Te Deum in the churches, no commemoration of the discoverers; the great discovery had to make its way against obstinate prejudice and folly in high places, even in some of our profession; and Liston's somewhat grudging utterance should serve as a warning to those of us who make light of new methods only because they are new. We are glad that Sir Edwin Arnold saw only the discovery itself, and not the way in which it was received."

#### NEW YORK.

**FORTIETH ANNIVERSARY OF THE WOMAN'S HOSPITAL.**—At the fortieth anniversary of the Woman's Hospital, held November 21st, Dr. Wm. T. Lusk and James C. Carter were among the speakers. During the year 927 patients were treated in the hospital, and 4,704 in the outdoor department. There were 48 deaths in the institution. The receipts from all sources amounted to \$50,340, and the expenditures to \$73,889.

**A TWENTY-FOUR POUND BABY.**—John J. Mackey, a porter employed at the Edison Building on Broad Street, is the proud father of a girl baby which weighed twenty-four and a half pounds at its birth on the night of November 17th. As John is a small man and his wife of only average proportions, the extraordinary size of their offspring is quite surprising.

**MEDICAL REPORTS OF THE PRESBYTERIAN HOSPITAL.**—The twenty-seventh anniversary of the

Presbyterian Hospital was celebrated with appropriate exercises on November 16th. The medical reports showed that during the year 2,624 patients were treated. In addition, 2,067 were cared for in the emergency ward, and 1,550 ambulance calls were answered. In the dispensary 13,044 new patients were treated. The expenses of the hospital during the year were \$165,692. The following receipts were reported: From pay patients, \$20,534; income from investments, \$27,851; donations, \$12,000. There was thus a deficit of \$90,625 for the year.

**A NEW WATER-SUPPLY FOR BROOKLYN.**—The Brooklyn City authorities are negotiating for the purchase of the plant of the New Utrecht Water Company, which is located at Sheepshead Bay and obtains a water-supply by means of twenty-seven driven wells. The water is said to be wholesome and almost pure, and the company has been supplying the old town of New Utrecht, which is now the Thirtieth Ward of Brooklyn. The plant has a capacity of eight million gallons per day.

**TYPHOID FEVER IN MILK.**—In Watertown, N. Y., where there has been a severe outbreak of typhoid fever, and where 50 per cent. of the cases were found to be in families supplied with milk by a single dairyman, a bacterial investigation made by the Board of Health of the milk supplied by the various dealers of the city has shown that in the milk of five vendors there were typhoid-fever germs, and in that of five others, tubercle bacilli, while in three other instances the milk was otherwise impure.

**THE LOW DEATH-RATE CONTINUES.**—Curiously enough, the number of deaths reported during the week ending November 23d was precisely the same as in the preceding week, 676. The average for the corresponding weeks of the past five years was 731. The mortality from both pneumonia and diphtheria shows a further decline.

#### Miscellany.

##### AN EARLY EXPRESSION OF THE NEED FOR REVISING THE RULES OF FOOTBALL.

THE following extracts from old English law reports show how slow has been the evolution of the naughty game of football to its present gentle estate:

Middlesex Sessions Rolls. Vol. I. 20 March, 18 Elizabeth.

True bill that seven of Woxbridge aforesaid, with unknown malefactors to the number of a hundred, assembled themselves unlawfully and played a certain unlawful game, called footeball, by reason of which unlawful game there rose amongst them a great affray, likely to result in homicides and serious accidents.

G. S. P. R. Easter, 18 Eliz.

5 March, 25 Elizabeth.

Coroner's Inquisition, post-mortem, taken at Southemys Co. Midd. on view of the body of Roger

Ludforde yoman, there lying dead. With verdict of jurors that Nicholas Martyn and Richard Turvey, both late of Southmymys yomen were, on the 3d instant, between 3 and 4 p. m., playing with other persons at foote-ball in the field called Evanes Field at Southmymys, when the said Roger Ludforde and a certain Simon Maltus of the said parish yoman, came to the ground, and that Roger Ludforde cried out "Cast hym over the hedge," indicating that he meant Nich. Martyn, who retorted "Come thowe and do yt"; that thereupon Roger Ludforde ran towards the ball with the intention of kicking it, whereupon seeing his purpose Nicholas Martyn "cum cubito dextri brachii sui" and Richard Turvey "cum cubito sinistri brachii sui" struck John Ludford on the forepart of his body under the breast, giving him a mortal blow and concussion, of which he died within a quarter of an hour; and that Nicholas and Richard in this manner feloniously slew the said John.

G. D. R. 15 April, 25 Elizabeth.

Middlesex County Records Sessions' Rolls, Vol. II, p. 81. 5 July, 10 James I.

True Bill that, at St. Andrew's in Holborn Co. Midd. on the said Sabbath Day, James Wilson late of said parish gentleman gathered to himself very many unknown persons in a certain place called Eely Field, and did play with them a certain unlawful game called footeball.

G. D. R. 13 Aug. 10 James I.

13 January, 12 James I. Order touching Foet-Ball.

Whereas greate disorders and tumults doe often arise and happen within the streetes and lanes neere adjoyninge to ye Cittye of London by playenge at the foote-ball: It is now ordered that henceforthe all constables 'doe from tyme to tyme repress and restrayne all manner of Foote-ball-playe in the lanes and streetes adjoyninge to the cittye of London. S. P. Reg.

## Correspondence.

### THE STUDY OF DERMATOLOGY IN EUROPE.

(Continued from No. 21, p. 531.)

#### PRAGUE.

THE general hospital of Prague is an old building, which, like so many of its kind in Europe, originally served as a convent. Professor Pick received me most cordially and hospitably, and introduced me to his assistants. Every kindness was shown me, and I found that I had an embarrassment of opportunities before me.

Every morning at half-past six, Professor Pick gives his lectures on skin and venereal diseases. At nine o'clock there is the out-patient clinic ("ambulatorium") held by Dr. Waelsch, one of Pick's first assistants. At nine o'clock there is also the visit in the wards by Pick himself, and lastly there are the dermatological operations. But now I must speak of Prague more in detail, for in my opinion it is one of the few cities in Europe, where one can study dermatology to advantage in all its branches.

The out-patient service is a very large one, and from five to seven thousand new cases are seen yearly, while the constant returning of old ones increases this large clinic enormously. As a rule, Dr. Waelsch sees all the cases save those which he considers of great interest or difficulty, and these patients are requested to wait for Pick, who looks in from time to time during the morning. The cases are often extremely instructive and interesting—in truth I know of but one out-patient clinic in Europe which

can surpass this Bohemian one of Professor Pick, and that is, of course, the St. Louis in Paris. The American often loses a great deal by not understanding the Bohemian language, for almost one-half of the patients are ignorant of German. The official language of the hospital is, however, German, and all the physicians and assistants prefer to speak it. To my mind there is one thing which detracts from the interest of the clinic at Prague, namely, the monotonous series of cases of gonorrhea, which follow one after another and delay the true dermatological and syphilitic patients. The daily attendance is about forty-five and they are soon cared for by the large corps of dressers. In Prague the patient's lesions are often dressed before he leaves the hospital, and I am sure that this is a great factor in the rapid cures which I saw there. I refer chiefly to the cases of old eczemas which disappeared almost miraculously under Professor Pick's plaster of five per cent. or ten per cent. salicylated soap plaster.

The most striking feature of this clinic is the important rôle which surgery plays. Sunday is the principal operating-day, but on almost any morning the visitor can find Professor Pick, knife or curette in hand, obliterating all traces of lupus from a patient's face or cutting away an epithelioma. As to lupus, of course the cure by the knife is very rapid, but a large scar remains, and several times I saw nodules starting up again in an old cicatrix of a lupus treated by this radical method. Scarification is seldom employed here over large areas, owing to the fear of a subsequent generalized miliary tuberculosis. Naturally, it was a great advantage to have seen these surgical treatments; but where ether and several assistants are employed, it seems as though dermatology were trespassing upon the domain of surgery.

The wards in Prague are divided into four parts—the men's dermatological and venereal, and the women's dermatological and venereal. The divisions are all extremely instructive on account of the large number of beds, and also because the student can see so many rare diseases so closely associated. I think the diseases of the house-patients there are more unusual than those in Vienna even, and surely that is saying a great deal in praise of Prague. Professor Pick visits the men and women on alternate days. He goes to the bed-ridden, whereas those who are able to walk come before him. My sensations at the first visit with him are still very vivid. Save in Paris, I have nowhere seen so many rare diseases assembled in one hospital. The women's venereal ward is unsurpassed in the world, so far as I have seen it. One might say almost that cases were gathered there by the hundred of hard and soft chancres, gonorrhea and adenitis of all locations. Certainly I have never seen such an array of feminine ulcers as mounted the examining table in Prague that morning. Another feature of the Prague clinic is the horrible extent of lupus and scrofuloderma. Of the former I have never seen so large a proportion in any city, and of the latter I have never seen such deep-seated, dreadful ravages. Some of the children were absolutely riddled by the tubercular foci.

Toward the end of my visit I went to see Professor Pick in his private room at the hospital. He showed me some beautifully mounted bacteriological preparations, many pieces of abnormal skin in alcohol, and some new fixed cultures of ring-worm, and then told me of the advantages offered by the bacteriological and chemical laboratories of Prague, and finally pointed to an empty place with a microscope before it. "There," said he, "is your place; come and work here for two years; I am sure you will want for nothing." Professor Pick told me that he liked to have strangers come to him, and that he gave them a place in his laboratory, which they could keep so long as he considered them an advantage to his clinic. I only regret that I had not known of such an opportunity. I felt then as I do now—if only I could have given my last three months of Vienna to Prague and Breslau. I can't do better than to advise everybody who is interested in skin diseases to spend some time in Prague, for there he will find lectures, clinics, visits, operations and microscopic

work all at their best, and under the direction of a professor and his assistants who are among the best in Europe and are extremely hospitable to the stranger.

(To be continued.)

### RESUSCITATION AFTER SUBMERSION.

GREENVILLE, MOOSEHEAD LAKE, ME.,  
November 9, 1895.

MR. EDITOR:—It occurred to me on reading "The Signs of Death" in the JOURNAL just received that a similar article on drowning might be useful. I wish you would give us something on it, for instance, how long a person can remain wholly and continuously submerged and afterwards be resuscitated, what the signs of death are, etc.

Of course, physicians know about it; only there is as widespread a popular superstition in regard to the time a person can be submerged in the water and then revived, as there is about being buried alive.

I have to make efforts to revive drowned persons whom I know are dead, simply on account of the false ideas on the subject. I have stood on a wharf while they grappled for a body fully ten minutes; and when the body was brought up I went to work—artificial respiration, etc.—though I knew the person was dead. I know a young physician who was censured for not making efforts to revive a child that had been under the water an hour.

We are told of persons being resuscitated who have been submerged twenty-five minutes, an hour, and so on; and perhaps an article by you might give some fellow, who wasn't acquainted with the popular idea and didn't try to revive a dead person, something to tie to.

Is it possible for a person who has been under water twenty-five minutes to be revived? Are there experiments on animals showing length of time they live under water?

If you will give me any information besides any article you may give us in the JOURNAL, I will be under obligation to you.

Very truly yours,

H. HUNT, M.D.

### PAMPHLETS RELATING TO THE MASSACHUSETTS MEDICAL SOCIETY WANTED.

BOSTON, November 26, 1895.

MR. EDITOR:—If any of your readers will assist me in completing a collection of pamphlets relating to the Massachusetts Medical Society, I shall be greatly obliged. I need the following:

Acts, By-Laws and Orders, printed in 1816.

Acts of the Legislature, etc., 92 pages, printed in Boston, 1822.

Acts, By-Laws and Orders, Boston, 1837, printed by J. Putnam.


Catalogue, 12 pages, without place or date, but probably 1816.

Amendments to the By-Laws and a Correct List of Fellows, June, 1837, 32 pages, 8°, Boston, J. Putnam.

Very truly,  
EDWARD J. FORSTER, M.D.,  
51 Massachusetts Avenue.

### METEOROLOGICAL RECORD.

For the week ending November 16th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.			Relative humidity.		Direction of wind.		Velocity of wind.		We'thr. •		Rainfall in inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.		8.00 P. M.
S...10	29.95	44	50	38	94	87	90	W.	N.	10	16	C.	O.	.05
M...11	30.34	38	41	34	85	82	84	N.W.	N.	5	5	C.	C.	—
T...12	30.39	33	40	28	91	81	86	N.W.	N.	5	5	C.	C.	—
W...13	30.44	38	43	33	86	76	81	N.	N.E.	12	20	C.	O.	.03
T...14	30.36	45	48	42	94	86	90	E.	E.	19	15	R.	R.	—
F...15	29.85	48	51	46	100	93	96	N.E.	W.	13	18	R.	R.	1.41
S...16	30.04	46	51	41	90	64	77	W.	S.W.	9	9	C.	C.	—
														1.49

\* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threat; N., snow. † Indicates trace of rainfall. ‡ Mean for week.

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 16, 1895.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	676	243	13.95	20.70	3.03	.75	5.25	
Chicago	1,678,967	416	154	20.40	13.44	4.60	3.12	12.24	
Philadelphia	1,164,000	380	109	12.74	14.04	1.30	1.30	8.32	
Brooklyn	1,100,000	365	125	15.48	17.92	1.96	1.40	8.68	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	491,005	191	55	14.56	15.60	1.56	1.56	8.32	
Baltimore	496,315	168	57	12.00	8.40	2.40	1.20	4.80	
Cincinnati	356,000	94	32	7.42	12.72	—	—	6.36	
Cleveland	314,637	—	—	—	—	—	—	—	
Washington	275,500	99	35	15.15	15.15	5.05	7.07	2.02	
Pittsburg	238,617	78	34	24.10	14.30	3.90	3.90	10.40	
Milwaukee	266,000	—	—	—	—	—	—	—	
Nashville	87,754	27	3	18.50	3.70	7.40	7.40	—	
Charleston	65,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	98,687	24	3	8.32	4.16	—	—	4.16	
Fall River	88,000	22	10	31.85	13.65	13.65	4.55	9.10	
Lowell	84,359	26	9	11.56	23.10	3.85	3.85	3.85	
Cambridge	81,519	24	7	20.80	20.80	—	4.16	16.66	
Lynn	62,335	19	2	10.54	10.54	—	—	10.54	
New Bedford	55,254	18	8	5.56	16.66	—	—	5.55	
Springfield	51,534	8	1	—	12.50	—	—	—	
Lawrence	52,153	19	5	10.52	10.52	—	—	10.52	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	17	2	—	11.76	—	—	—	
Brookton	33,157	5	1	—	20.00	—	—	—	
Haverhill	30,185	6	3	16.66	—	—	—	—	
Malden	29,706	9	3	22.22	—	—	11.11	—	
Chelsea	31,296	5	1	8.25	—	—	—	8.25	
Fitchburg	26,394	5	1	—	40.00	—	—	—	
Newton	27,022	10	4	—	—	—	—	—	
Gloucester	21,663	—	—	—	—	—	—	—	
Taunton	27,093	7	1	—	—	—	—	—	
Waltham	20,877	10	—	20.00	10.00	—	20.00	—	
Quincy	20,712	9	3	44.44	—	—	—	33.33	
Pittsfield	20,447	6	1	—	—	—	—	—	
Everett	18,578	6	2	—	33.33	—	—	—	
Northampton	16,738	3	1	33.33	—	—	—	—	
Newburyport	14,564	1	0	—	—	—	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 2,894; under five years of age 916; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 409, acute lung diseases 436, consumption 321, diphtheria and croup 219, diarrheal diseases 70, typhoid fever 56, measles 20, scarlet fever 17, whooping-cough 15, cerebro-spinal meningitis 14, malarial fever 11, erysipelas 7.

From measles New York 10, Baltimore 3, Philadelphia, Pittsburg and Providence 2 each, Brooklyn 1. From scarlet fever New York 7, Brooklyn 4, Pittsburg 2, Philadelphia, Boston, Haverhill and Malden 1 each. From whooping-cough New York 6, Brooklyn 4, Philadelphia, Cincinnati, Pittsburgh, Providence and Northampton 1 each. From cerebro-spinal meningitis Chicago 5, New York and Washington 2 each, Baltimore, Boston, Worcester, Quincy and Brookline 1 each. From malarial fever New

### NEW CATALOGUE OF MASSACHUSETTS MEDICAL SOCIETY.

BOSTON, November 21, 1895.

MR. EDITOR: The next catalogue of the Officers and Fellows of this Society will be issued early in 1896, and will contain the names of the honorary, active and retired Fellows borne on the rolls on the first day of January next.

Any Fellow who has changed his residence during the past year and any Fellow whose name is incorrectly given in the last catalogue will confer a favor by at once notifying the Treasurer,  
EDWARD JACOB FORSTER, M.D.

York and Brooklyn 3 each, Baltimore 2, Philadelphia, Washington and Nashville 1 each. From erysipelas New York 3, Philadelphia 2, Chicago and Brooklyn 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,591,530, for the week ending November 9th, the death-rate was 22.1. Deaths reported 4,492; acute diseases of the respiratory organs (London) 447, measles 187, diphtheria 100, fever 90, whooping-cough 68, scarlet fever 54, small-pox (London and West Ham 1 each) 2.

The death-rates ranged from 13.2 in Croydon to 37.6 in Liverpool; Birmingham 21.1, Bradford 23.5, Cardiff 20.8, Gateshead 17.9, Hull 18.8, Leeds 20.7, Leicester 15.9, London 21.2, Manchester 25.7, Newcastle-on-Tyne 21.2, Nottingham 16.6, Portsmouth 17.0, Sheffield 25.1, Sunderland 20.4, West Ham 17.1, Wolverhampton 33.4.

#### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 16, 1895, TO NOVEMBER 22, 1895.

Leave of absence for four months, to take effect about December 10, 1895, is granted CAPTAIN GEORGE MCCREERY, assistant surgeon.

The leave of absence granted MAJOR JOSEPH K. CORSON, surgeon, is extended twenty days on surgeon's certificate of disability.

FIRST-LIEUT. IRVING WALLACE RAND, assistant surgeon, will report in person without delay to the president of the Army Medical School for the course of instruction prescribed in General Orders No. 78, September 22, 1893, from adjutant general's office.

#### APPOINTMENTS.

To be assistant surgeons with the rank of First-Lieutenants, November 6, 1895: THOMAS JELLIS KIRKPATRICK, JR., JOHN HAMILTON STONE, IRVING WALLACE RAND.

POWELL CONRAD FAUNTLEROY, to be assistant surgeon with rank of First-Lieut., November 15, 1895.

#### PROMOTIONS.

MAJOR JUSTUS M. BROWN, surgeon, to be deputy surgeon-general with the rank of Lieutenant-Colonel, November 15, 1895.

CAPTAIN DANIEL M. APPEL, assistant surgeon, to be surgeon with the rank of Major, November 15, 1895.

#### RETIREMENT.

LIEUT.-COL. JOSEPH R. GIBSON, deputy surgeon general, retired from active service November 15, 1895, on account of disability incident to the service.

#### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 23, 1895.

P. S. WALES, medical director, ordered to duty as member of the Retiring Board, Washington, November 25th, in addition to his present duties.

R. P. CRANDALL, passed assistant surgeon, detached from the naval laboratory and ordered to the naval hospital, New York.

PHILIP LEACH, passed assistant surgeon, detached from the naval hospital and ordered to the naval laboratory, New York.

#### OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING NOVEMBER 15, 1895.

FESSENDEN, C. S. D., surgeon. Ordered to proceed from Salem to Boston, Mass., for physical examination. November 14, 1895.

CARMICHAEL, D. A., passed assistant surgeon. Relieved from duty at St. Louis, Mo., and directed to proceed to Vineyard Haven, Mass., and assume command of service. November 1, 1895.

BROOKS, S. D., passed assistant surgeon. Relieved from duty at Chicago, Ill., and directed to proceed to St. Louis, Mo., and assume command of service. November 5, 1895.

WHITE, J. H., passed assistant surgeon. Granted leave of absence for twenty-three days. November 5, 1895.

PERRY, T. B., passed assistant surgeon. Granted leave of absence for thirty days. November 11, 1895.

COBB, J. O., passed assistant surgeon. To proceed from Port Townsend to Port Angeles, Wash., as quarantine inspector. November 1, 1895.

STONE, J. B., passed assistant surgeon. To proceed from Detroit, Mich., to Baltimore, Md., for temporary duty. November 1, 1895.

GARDNER, C. H., assistant surgeon. To proceed from San Francisco, Cal., to Chicago, Ill., for duty. November 5, 1895.

NORMAN, SEATON, assistant surgeon. To proceed from Baltimore, Md., to New Orleans, La., for duty. November 1, 1895.

THOMAS, A. R., assistant surgeon. To assume temporary command of service at St. Louis, Mo. November 1, 1895.

GREENE, J. B., assistant surgeon. To proceed from Vineyard Haven, Mass., to Baltimore, Md., for duty. November 1, 1895.

#### SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 2d, at 8 o'clock.

Dr. H. B. Howard, of Tewksbury, will make a report, by invitation, on "The State Almshouse during Twelve Years of Medical Superintendence." Dr. C. J. Fisher, of New York, is expected to take part in the discussion.

Dr. J. H. Nichols will report, by invitation, "Four Cases of Small-pox at the State Almshouse in the Spring of 1891."

JAMES G. MUMFORD, M.D., Secretary.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION.—The regular monthly meeting of the Surgical Section of the Suffolk District Medical Society will be held at 19 Boylston Place, at 8 o'clock, Wednesday evening, December 4, 1895.

Dr. S. J. Mixer: "Tumors of the Parotid."

Dr. G. H. Monks: "Plastic Operation for New Nose." Exhibition of patient.

Dr. Paul Thorndike: A Case of Deep Urethral Stricture in a Syphilitic Patient."

Dr. F. B. Lund: "Local Anesthesia."

M. H. RICHARDSON, M.D., Chairman.

CHARLES L. SCUDDER, M.D., Secretary.

#### HARVARD MEDICAL SCHOOL.

##### EVENING LECTURES.

The next lecture will be given on December 5th, at 8 P. M., by ASST. PROF. FRANKLIN DEXTER. Subject: "A Glance at the Structural Plan of the Brain." The profession are invited.

#### BOOKS AND PAMPHLETS RECEIVED.

Hyperthermy in a Man up to 148° F. (64.4° C.). By A. Jacobi, M.D. Reprint. 1895.

Bromoform in Pertussis. By P. J. Eaton, A.M., M.D. (Harv.), Pittsburgh, Pa. Reprint. 1895.

Surgical Treatment of Laryngeal Tuberculosis. By J. W. Gleitsmann, M.D. Reprint. 1895.

Three Cases of Enucleation of the Eye, with Remarks. By Leartus Connor, A.B., M.D. Reprint. 1891.

Appendix to Dunglison's Medical Dictionary. Twenty-first edition. Philadelphia: Lea Brothers & Co. 1895.

Hypnotism, How it is Done, Its Uses and Dangers. By James R. Cocke, M.D. Boston: Arena Publishing Co. 1894.

Is Hydrochloric Acid Secreted by the Mucous Membrane of the Stomach? By J. A. Wesener, Ph.C., M.D. Reprint. 1895.

Clinical Notes on Psoriasis, with Especial Reference to its Prognosis and Treatment. By L. Duncan Bulkley, A.M., M.D. Reprint. 1895.

Treatment of Uterine Retrodisplacements by Vagino Fixation, with Reports of Cases. By Frederick Holme Wiggins, M.D., New York. Reprint. 1895.

Transactions of the Colorado State Medical Society, Twenty-fifth Annual Convention. By-Laws and List of Members, Denver: Published by the Society. June, 1895.

Pioneer Work in Opening the Medical Profession to Women. Autobiographical sketches by Dr. Elizabeth Blackwell, author of "The Moral Education of the Young," etc. London: Longmans, Green & Co. 1895.

Transactions of the Obstetrical Society of London, Vol. XXXVII, for the year 1895. Part III for June and July. Edited by William Duncan, M.D., Senior Secretary, and Percy Boulton, M.D. London: Published by the Society. 1895.

Notes on Surgery for Nurses. By Joseph Bell, M.D., F.R.C.S. Edin., Consulting Surgeon to the Royal Infirmary, and Surgeon to the Royal Edinburgh Hospital for Sick Children. Fourth edition, thoroughly revised. With an additional chapter of General Advice to Nurses. Edinburgh: Oliver & Boyd. 1895.

A Hand-Book of Medical Diagnosis for Students. By James B. Herrick, A.B., M.D., Adjunct Professor of Medicine, Rush Medical College; Professor of Medicine, Northwestern University Woman's Medical School; Attending Physician to Cook County Hospital; Assistant Attending Physician to Presbyterian Hospital, Chicago. With 80 illustrations and two colored plates. Philadelphia: Lea Brothers & Co. 1895.

## Original Articles.

THE TREATMENT OF CERVICAL ADENITIS.<sup>1</sup>

BY F. M. BRIGGS, M.D.,

*Assistant Professor of Clinical Surgery, Tufts College Medical School,  
Surgeon to the Boston Dispensary.*

THE three portions of the body where we find affections of the lymphatic glands calling for treatment are the neck, the groin and the axilla. What can be said of one can be applied generally to all three, but I shall confine myself to the region of the neck.

Cervical adenitis is of frequent occurrence; and as, with possibly a few exceptions, it is secondary to a pre-existing condition, the first object in every case is to find the cause, if possible.

For convenience of discussion I make five divisions; and although this classification cannot be always sharply defined, I believe it to be a fairly accurate one.

These divisions are:

- (1) The Irritative, as, for instance, due to tonsillitis, a tooth, pediculi, a furuncle, a carbuncle.
- (2) The Local Infective, as cancer or chancre in this region.
- (3) The General Infective, as general syphilis, leukemia, Hodgkin's disease.
- (4) The Tuberculous.
- (5) Those whose etiology is unknown.

I have not attempted to include in this classification every cause of cervical adenitis, but have simply given various conditions, as illustrative of the particular class. I think, however, that every condition which may be a cause will be found to come under some one of the different heads.

CLASS 1. The Irritative forms a considerable proportion of the total number; and in these cases the source of irritation is usually easily discovered upon examination. If not evident upon the outside, inspection of the mouth, nose and ears should be made, and made carefully. If nothing can be found to which the adenitis can be ascribed, the patient should be closely questioned as to any trouble previously existing in the parts mentioned, for it sometimes happens that after the source of irritation has disappeared the resultant glandular enlargement remains. I shall discuss this question under Class 5, or those of unknown etiology, but call attention here to the importance of investigating every possible source of near-by irritation, for I think that if this were done in every case, many of those which are now classed as tuberculous or scrofulous would be found to be neither.

In the irritative form, treatment should be directed towards the irritating cause, for with the subsidence of the cause the glands usually take care of themselves and disappear as rapidly as they came. But they may not. The source of irritation having subsided, the glands are sometimes left behind; and if such a case be seen at this time, it must be placed in Class 5, and treated accordingly. As a general rule, however, in Class 1, treatment directed solely towards the cause cures the adenitis.

CLASS 2. The Local Infective. We have here those due to a disease localized, for the time being, in this vicinity. Cancer of some part of the face is not

unusual, and secondary disease of the cervical glands commonly follows it. They are then cancers themselves, and should be treated upon the same principles that the primary cancer is itself treated. If this is operable, the glands should be removed also, but nothing is gained by their removal if the original growth is inoperable.

Chancre belongs in this class, for syphilis occasionally starts on the face. If it does, the cervical glands act precisely as do the inguinals where the initial lesion is on the penis. They enlarge as hard, painless masses. Constitutional treatment is the only one and under suitable specific treatment the glands subside. Nothing local is indicated.

In CLASS 3 we have those cases due to constitutional disease, as general syphilis, leukemia and pseudo-leukemia or Hodgkin's disease. In this class the cervical affection is only a part of a general glandular disturbance, but it is important to distinguish the etiology. As regards syphilis, in a recent case where the initial lesion occurs upon the genitals or elsewhere, but not upon the head, the cervical glands usually participate in the general lymph adenitis, but they are rarely, if ever, found in the front. They occur on the back of the neck, running up under the scalp, as small, hard, rounded, freely movable and painless bodies.

There is a late form of specific adenitis where considerable enlargement of the glands in the front and sides of the neck is found. In the cases that I have seen, numerous similar glands have been found elsewhere, there has been a distinct history of a more or less remote specific infection, and the trouble has reacted to specific treatment.

From what I have seen of glandular affections I should say that enlarged glands found in the front and sides of the neck, but nowhere else, are never specific; that glands found in the back of the neck, with the characteristics above given are strongly suspicious of a recent infection, even where nothing else is showing at the time, and that in every case of cervical adenitis coexisting with a general lymph adenitis, syphilis, either recent or remote, should always be considered, and only excluded after careful investigation. The importance of making the diagnosis, of course, bears upon the treatment, for if syphilis is the cause, the case calls for treatment long after all signs of adenitis have disappeared.

Concerning leukemia and pseudo-leukemia, I know nothing practically; and as, in what I have to say, I wish to keep as closely as possible within my own clinical experience, I will pass them both over with a few words. As I understand it, leukemia is sometimes accompanied by an affection of the lymph glands, occurring by preference in the neck. The disease is characterized by a marked increase in the white blood-corpuscles, upon which the diagnosis is based. In pseudo-leukemia enlargement of the cervical glands is an early symptom, and they may grow to an enormous size. Their removal has apparently no influence upon the progress of the disease, and is wholly palliative.

Viewed from the point of direct treatment of the glands, interest centres upon the tuberculous, which I have purposely placed in a class by themselves and upon Class 5, or those whose etiology is unknown.

Although I have classified them separately I shall consider them together.

<sup>1</sup> Read at the meeting of the Boston Society for Medical Improvement, March 9, 1896.



If, and it is by no means infrequently the case, an individual in apparently full health, with no sign of present or pre-existing disease, with a clean family history, and from whom the most rigid inquiry and examination fails to reveal the slightest clue as to the cause, presents himself (or herself) with one, two or perhaps a whole chain of enlarged cervical glands, to what can we ascribe the etiology? It is now, much too frequently, the custom to call every case of cervical adenitis, which cannot be otherwise accounted for, tuberculous; and it is the generally accepted rule that tuberculous glands should be excised. Until recently they were known as scrofulous or strumous, and were looked upon as an acute outbreak of an obscure humor handed down as an inheritance of some obscure ancestral disease. While this latter theory was in force, surgical interference was the last, not the first treatment resorted to. If they disappeared spontaneously, so much the better. If they did not and pus was evident, they were either allowed to break under a poultice or were subjected to a long incision, and curetting. This method of treatment, with its disfiguring scars, prevailed for many years.

But with the demonstration of the bacillus of tuberculosis, and with the proof that the disease can be directly inoculated by the bacillus or its products, has come a decided change as to the proper treatment to be adopted. In a chronic cervical adenitis, the opinion is, that the patient is exposed to very great risk of a more or less general tuberculous infection, if these glands are not removed. That each and every one of them may be a focus of disease, for the reason that, even if not tuberculous at the time, they are liable to become so at any moment, and that therefore their radical excision is called for.

It must be remembered that in such cases as these we are dealing with an exposed portion of the body, a portion that is open to constant inspection, and in every case the final result, as regards the appearance of the skin, ought to have great weight in deciding as to the method of treatment to be adopted. While a considerable scar elsewhere is of little significance, any scar on the neck is of considerable importance, a fact which I have found to be fully appreciated by patients.

But before the scar, the future health of the patient must be considered. A treatment which prevents a scar and which allows a phthisis to develop can scarcely be called sound, and if it is a fact that any persistently enlarged cervical gland is to be the cause of a future consumption, and if with its removal the danger ceases, then, certainly, there can be no question.

Does this danger, however, exist in reality? When we consider the enormous number of cases of phthisis throughout the world, it seems incredible that this should not be distinctly proven, if it be a fact. It does not seem possible, that with the keen observation of medical investigators everywhere, and with the interest taken in tracing just such points as this, that if it really were the case, we do not now have numerous sets of statistics, and numerous reports of individual cases, proving the causal relation—but that it should stand, as it does, an hypothesis—a theoretical possibility.

If I were to go to any large medical clinic in this or any other city, and ask the physician on duty to allow me to see all the cases of pulmonary tuberculosis

that came to his clinic for, say, three months, I should have a small army of consumptives to demonstrate whatever particular point I might be investigating regarding the disease itself.

If I were to ask to see all the cases where a cervical adenitis coexisted with the phthisis, I might get a few. But if I were to ask for all the cases of pulmonary tuberculosis where there was a distinct evidence of a pre-existing cervical adenitis, to which the pulmonary infection could be traced as its source, how many would I find? Not one, I think.

On the other hand, it is by no means uncommon to see individuals well along in life with scarred necks resulting from glandular trouble years before, who are and have been in good health, and with no sign of present or previous pulmonary or other tuberculosis. Numerous cases of cervical adenitis of unknown origin disappear spontaneously in patients who were at the time, and have been, perfectly well.

The subject is an obscure one. It may be explained by assuming that every lymph-adenitis is inhibitory, and is nature's method of stopping further infection; that where infection is carried, it is by the blood, not by the lymph glands, which are everywhere acting as a check.

For a period of some five years I have treated all these cases upon the theory that they are not sources of systemic infection, that the glands can be left *in situ* with perfect safety, and that their excision is called for only in exceptional cases. I have seen nothing as yet to change this opinion, but, on the contrary, with every year grow more positive as to its soundness.

In summing up to this point, the first object of treatment of all cases of cervical adenitis is to bring about subsidence, by treatment of the cause if that is evident; by direct treatment of the gland itself, if no cause is at hand.

In chronic cases, even where the cause can be clearly demonstrated, treatment must often be both general and local. As regards the use of drugs, this must depend upon the individual case: mercury, iodide of potassium for syphilis, iron for anemia, quinine, strychnia, nux vomica, calasaya, cinchona, malt, etc., or any proper combination of such drugs, as indicated. Cod-liver oil is surrounded by a time-honored halo. I question whether it has the specific action on these glands that it is supposed to have. It supplies fat to those systems where fat is lacking, and is indicated where the condition of the patient shows that fat is needed. I believe one teaspoonful three times a day enough for any adult, and a smaller quantity for a child.

As regards local treatment, the external use of tincture of iodine is often of great benefit, but it should be applied intermittently not continuously. It should be painted on, heavily, for three or four days, then omitted until the skin has recovered and again applied for three or four days. Even where there is no immediate apparent effect, I continue its use in this way for a long time, and have seen subsidence occur in cases which I had thought to be hopelessly chronic—whether as a result of treatment, or a coincidence, I am unable to say. Personally, however, I give the benefit of the doubt to the iodine.

Contractile collodion applied thickly sometimes causes subsidence. It is indicated only where one or two glands are involved, and where they are comparatively soft.

Injection of carbolic acid into the gland tissue is recommended, but as I have never tried the method can give no opinion as to its merits.

It would not be an overestimate to state that in fully 90 per cent. of all these cases, we can expect one of two results, namely, subsidence or pus.

Supposing, however, that in any given case subsidence does not occur, and no abscess results, but the indolent masses stay enlarged with little or no change, it is very difficult to decide as to what to advise regarding treatment. Should such glands be excised? I am strongly opposed to their removal until there is positively no further chance of a cure by absorption, that is to say, when the long-continued chronic inflammatory process has caused a true tissue change. But just when this time can be said to have been reached, is in my experience a very difficult point to decide. I make it a rule (it is, of course, an arbitrary one) that no such gland should be removed until it has remained *unchanged* for twelve months. I emphasize "unchanged" for if during that time, it has gone partially down, then enlarged again, etc., I consider that there is still chance for absorption.

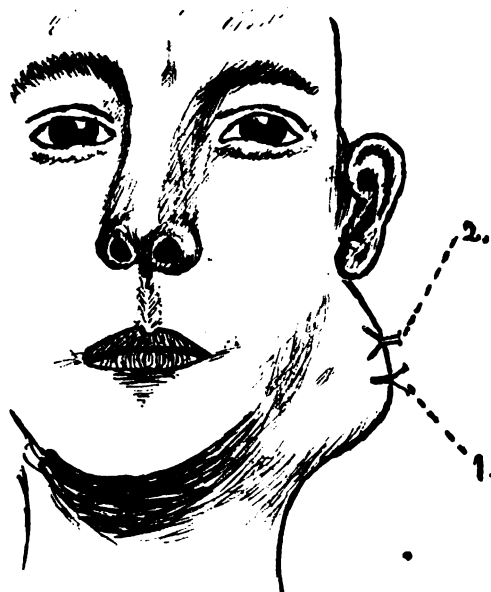


FIG. 1. Sketch of large cervical abscess, showing the canula as it was when inserted (1) and as it is when within the abscess cavity (2).

Excision of cervical glands is not a satisfactory operation, for if only a few glands are to be removed at the time, others are liable to enlarge and call for one or more future operations, and if a whole chain, both superficial and deep, is involved, the removal is no slight matter, either at the time or afterwards.

In conclusion, there is left to be considered a very frequent result of cervical adenitis, namely, cervical abscess. Having already written twice at some length regarding the treatment of cervical abscess with reference to the avoidance of scar, I shall only briefly recapitulate here what I have already said and refer any one interested in the subject to my previous articles for a more extended discussion.<sup>2</sup>

<sup>1</sup> The Avoidance of Scar in the Treatment of Cervical Abscess, with Three Cases, Boston Medical and Surgical Journal, June 12, 1895.

A Self-Retaining Drainage Canula for preventing a Scar in Cervical Abscess, loc. cit., May 2, 1895.

Since my last report made in May, 1895, in which I gave a table of 13 cases, I have added to the list numerous other cases that I have treated; but as the results have been, with one exception, uniformly good, and similar in every way to the results already recorded, I have no further notes to add. Out of some 40 cases treated, I have had but two scarred necks. The almost invariable rule is either no scar, or a mark so slight as to be merely a blemish.

My method is what I have named the canula treatment, and is as simple as it is satisfactory. My results are obtained by using a little self-retaining drainage canula<sup>1</sup> invented by me some two years ago. A glance at the accompanying cuts will show just what this canula is and what it effects. The skin cut is barely three-eighths of an inch in length, just long enough to admit the canula (see Fig. 1), which upon being inserted, is pushed in until its joint is reached, as shown at 1. The canula is then reversed by closing its outer arms, when, as will be seen, as shown at 2, it is retained within the cavity, dilating the tissues in the vicinity of the cut and giving good drainage through a minimum cut. I show this on an enlarged scale in Fig. 2.

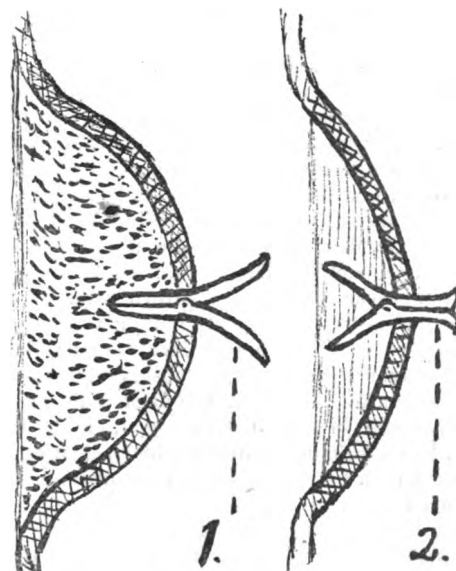


FIG. 2. Figure 1 (enlarged). This sketch shows in detail the introduction of the canula, the way in which it dilates the immediate tissues, retains itself, and drains the abscess cavity.

It should be left in place from twenty-four to seventy-two hours, but usually two days are sufficient. The shorter the time it is left in, the better the result; and I think it wiser to err in removing the canula too soon, rather than to leave it in too long, for it can be easily re-inserted at any time, should further drainage be needed.

Syringing and curetting are not needed. Nothing should enter the abscess except the knife which opens it and the canula which drains it. In the average case, healing follows in from five to seven days; but if the gland is only partially destroyed when pus is evident, the case may take many weeks. In these cases a persistent sinus is left, calling for treatment. It is here where injections and curetting are called for. I dilate these sinuses with olive-pointed bougies,

<sup>2</sup> These canulas are manufactured by Leach & Greene, Park Square, Boston.

scrape with a small curette and inject with any one of the various stimulating or irritating solutions, according to the apparent condition of the lining wall of the sinus. These cases are extremely tedious, but the final result is good, as will be seen by examination of the accompanying cuts.

Fig. 3 is the first and Fig. 4 the second of the poor results that I have referred to. Fig. 3 is Case 11 of the table in my report of May 2, 1895, when I gave the following description of the case.<sup>4</sup>

"Case 11 is still under treatment. This was a mass of partly broken-down glands under the right ear. A canula was inserted February 28th, and was pulled out on the dressing, by the patient herself, the following day. It was pulled out with the inner arms open, and the cut was torn to three-eighths of an inch. There was very little subsequent suppuration, and the glands instead of showing abscess formation have been slowly disappearing. There is a sinus about one inch in depth. It may be that in this case a radical operation will be necessary later on, and that the glands will have to be cut out; but before doing this I shall give the patient at least eight weeks more. I think, however, that the adenitis will disappear spontaneously, or that further suppuration will occur, and allow of the insertion of another canula. At present, absorption is evidently going on. The swelling has diminished fully one-half in size, and the patient is in good physical condition. The final result will be reported in any event."

The final result is here reported.

In this case absorption went on, and the glandular masses disappeared entirely, leaving a small round cicatrix. For some reason, which cannot be explained, this cicatrix grew in size, and ended by leaving an ovoid scar one inch long by half an inch broad, slightly depressed, but not discolored. I saw the patient in October, 1895, and she thought it seemed to be growing smaller, but I could see no change.

Why this scar should have grown after all inflammation had subsided and all glandular enlargement had disappeared, is beyond explanation; but it exemplifies the tendency, long since observed, to the formation of scar after abscess of the neck. This tendency is again shown in Fig. 5. This girl, eighteen years of age, had a glandular abscess when seven years old. It was out by a long incision, and the present network of keloid is the result.

Fig. 4 is shown as being a fairly typical case of cervical adenitis in a child. It has not done well, and there is quite a scar; for what reason I cannot explain. But as this case and Case 3 are the only two poor results that I have had in some 40 cases, they should not militate against the method, for with 95 per cent. of good results in all varieties of cases an occasional poor result has no weight.

Figs. 6, 7, 8 and 9 are shown as being good results in extremely difficult cases.

Fig. 6 is Case 1 of the table which I published with my last paper. There is nothing showing, although it was an extensive suppurating adenitis, needing three canulas at different points. E is one of these points, and is a slightly depressed, small cicatrix. F is a mole. The points where the two other canulas were inserted are not visible.

Fig. 7 was the first case treated by me upon this principle, and it was this case that led me to develop the canula, for I had great difficulty in keeping the points A, B and C open, and in draining properly. No case of the kind could be more severe, extensive

or destructive than was this one. Apparently every gland on the left side of the neck, both superficial and deep, inflamed and broke-down. He was left with large branching sinuses running from the ear to the clavicle.

The cut shows his present appearance, with only three trifling marks. He is and has been in fine condition physically.

Figs. 8 and 9 are reproduced from my last paper, and show Case 3 before and after treatment.

I could show many other cases similar to those here demonstrated, but the extreme difficulty of persuading patients to have their photographs taken for publication compels me to limit my illustrations to those as shown by accompanying cuts.

## THE WEARING OF VEILS, AND ITS EFFECTS UPON THE EYESIGHT.

BY CASEY A. WOOD, M.D., CHICAGO, ILL.,  
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ALTHOUGH we hear and occasionally read of the ill effects produced by veils upon the eyesight, very little has been done in the way of determining the exact degree of interference with vision which these ornamental, and occasionally useful, protectors bring about.

The fact that the wearing of veils is productive of weak eyesight, headaches, and sometimes vertigo and nausea, is within the experience of every ophthalmologist. Not only are these effects produced by the eye-strain consequent upon the added efforts made by one or both eyes to see through or around an obstruction, but the irregular figuring on the veil itself is, in some instances, a source of annoyance to the wearer. As in other cases of abuse, the burden rests heaviest upon the weakest eyes, and probably the reason why one encounters so comparatively few instances of asthenopia directly due to veil-wearing is that the embarrassed eyes are able to overcome the additional strain where the vision is normal, the oculo-muscular system in proper equilibrium and the general health good.

For the purpose of demonstrating the extent to which veils of various kinds influence the eyesight, I had selected for me a dozen typical specimens, and made with them a number of experiments. I now report the most important of these, namely, that which refers to their direct effect upon vision.

It must be premised that a person having normal vision should be able to distinguish, with each eye separately, capital block letters (bold-faced type) a quarter of an inch square at a distance of six metres or twenty feet, and to read with ease diamond print at a distance of ten to fourteen inches (25 to 40 centimetres). Individuals possessing this visual power may be said to have vision (or  $V$ ) of 1. Any deviation from either of these standards is commonly represented by fractions, vulgar or decimal. Thus, in some instances,  $V = \frac{1}{2}, \frac{2}{3}, \frac{3}{4}, .50, .70$ , etc.

Now for the test. An individual possessing full acuity of vision in each eye, for both distance and near, was chosen, and the effect upon the eyesight was recorded after a trial with each veil, using the distant test-types at six metres and various other kinds of test-print for reading.

<sup>4</sup> Boston Medical and Surgical Journal, May 2, 1895, p. 436.



FIG. 3. Multiple glandular inflammation under right ear, with partial breaking down and subsequent absorption of glandular mass left after suppuration had ceased. Has ovoid cicatrix one by one-half inch, which does not show as distinctly in cut as it does on the individual. This unusual growth of scar-tissue long after recovery cannot be explained.

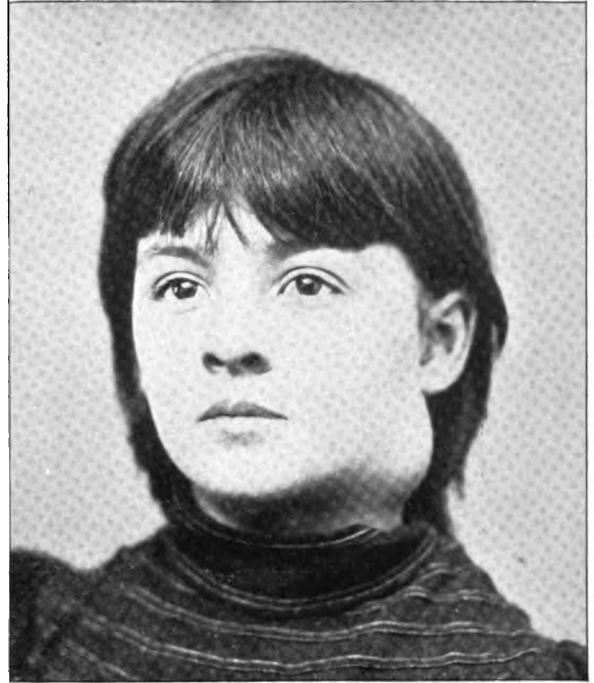


FIG. 4. Shown as being illustrative of a cervical adenitis of unknown etiology in an otherwise healthy child. Canula treatment. Poor result. This case and Fig. 3 are the only poor results in over forty cases treated by this method. When I say poor results, I mean in comparison with such results as are shown in Figs. 6, 7 and 9.



FIG. 5. Shown for comparison. Age eighteen. Had glandular abscess when a child. Treated by long incision, resulting in present disfiguring keloidal scar.



FIG. 6. Extensive suppurating adenitis of superficial and deep glands. Canula inserted at three different points. Complete recovery with one trifling mark as shown at E. The point indicated by F is a mole. The mark left by the canula at E will be seen to be no worse than any one of the numerous freckles on the face.

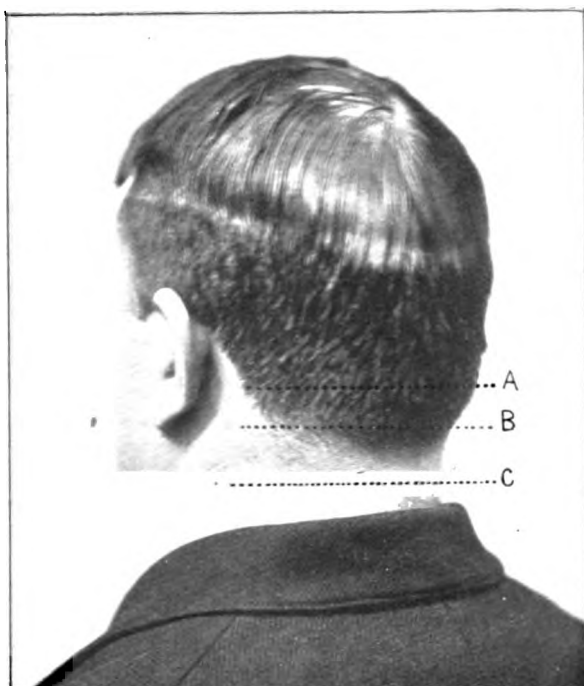


FIG. 7. Suppurating adenitis of apparently the whole chain of glands, both superficial and deep, extending from the mastoid process to the clavicle. Treated four years ago. Has three small scars, one back of the ear, the others in a line directly below this one.



FIG. 10. Shown for comparison. Child, age three. Glandular abscess twelve months ago. Broke under poultice. Has never healed. Has present appearance.



FIG. 8. Case 3 before treatment. A multiple glandular abscess involving the front of the neck. Drained by one canula inserted at D.



FIG. 9. Same case two months later.

(1) The first experiment was made with a fine black net-veil having small black dots two inches apart and white flowers three inches apart. There are one hundred meshes to the square inch and the dots are one-sixteenth of an inch in diameter. Distant vision is reduced by it, in each eye, to two-thirds, and diamond print is read with difficulty through the meshes. When a spot presents before the pupil, bourgeois is the smallest type that can be made out.

(2) Single thread, chenille dot, black fish-net. Sixteen squares and sixteen dots to the square inch. Both distant and near vision very little reduced unless a dot be in front of the pupil, when it affects sight as with No. 1.

(3) Black, dotted, double-threaded net. Dots are one-fourth of an inch in diameter, and nine to the square inch. The distant visual acuity is reduced to from two-fifths to one-fifth, and print to from small pica to great primer, according as the object is seen *through* the open meshes or *around* a dot. All print is greatly blurred.

(4) Finest, plain black Brussels-net. Vision was three-quarters, and fine print blurred, but pearl could be read.

(5) Same as No. 4, with pin-head dots, nine to the square inch. Result of examination same as No. 4.

(6) Plain black *chiffon*. Vision much lowered; one-half for distance, and minion type in reading.

(7) White Brussels-net lace, with flower-spray four inches apart. Sixty meshes to the square inch.  $V=\frac{2}{3}$ , and pearl type blurred.

(8) Single-thread, dotted, square-mesh net. Forty-eight meshes to square inch, dots one-eighth of an inch in diameter, one and one-half inches apart. Vision only slightly reduced.

(9) Same as No. 8, but dots four times as numerous.  $V=\frac{2}{3}$  when a spot presents directly in front of eye.

(10) Fine black net, like No. 1, but with flower-spray three inches apart. Result the same, but with spray before pupil vision is somewhat worse.

(11) White, double-thread net, four black dots and sixteen meshes to square inch. Very "irritating" veil.  $V=\frac{2}{3}$ , and minion type blurred.

(12) Same as No. 8, but dots larger. Vision only markedly lowered when dot is in front of pupil.

The above tests show

(1) That every description of veil affects more or less the ability to see distinctly, both in the distance and near at hand.

(2) The most objectionable kind is the dotted veil, although the influence of this variety for evil is more marked in some samples than in others.

(3) Other things being equal, in undotted and non-figured veils, vision is interfered with in direct proportion to the number of meshes per square inch.

(4) The texture of the veil plays an important part in the amount and kind of eye-strain produced by the veil. When the sides of the mesh are single, compact threads, the eye is embarrassed very much less in its effort to distinguish objects than when double threads are employed.

(5) The least objectionable veil is that without dots, sprays or other figures, but with large regular meshes made with single, compact threads.

As I have said, it is not a necessary consequence of the wearing of veils that eye symptoms result. A healthy eye in a healthy body resists the strain of an

impediment to vision just as it does other deleterious agents; and it is only when from other causes the eye-sight is weakened that the wearing of an objectionable veil proves immediately and obviously hurtful. I have noted many cases of headache and painful vision, as well as other ocular symptoms, produced by veil wearing in persons whose eyes are not overstrong; and I believe that this practice is one of the agents, not perhaps always recognized, that contribute to ocular discomfort.

Certainly it is not the part of wisdom to compel our visual organs to overcome unnecessary obstacles in the effort to see.

It has been urged in defence of veils that they are often required for the protection of the face, to keep the hair in order or to retain the hat in place. If the happiness and comfort of members of the gentler sex are thus bound up in veil-wearing, they should at least give preference to those veils that do the least harm.

But what excuse can be urged for that not uncommon offence, the attempt to *read* through this unnatural screen? And yet such exhibitions are of every day and every night occurrence in places of public resort — street-cars, railway trains, churches, theatres, concert halls, club rooms, etc. — thus adding to the injury of defective distant vision the insult of eye-strain for near work.

## SALT RIVER VALLEY, ARIZONA.

BY ALEXANDER E. BECKER, M.D., PHOENIX, ARIZ.

It is evident that the physicians and people generally of the Atlantic States are ignorant of—or, at best, do not appreciate—the very remarkable climatic advantages to be found in the Salt River Valley of Arizona, in the midst of which is located the enterprising little city of Phoenix; but with a considerable personal experience of the health resorts of this country and Europe, and after much reading, I can assure them that I know of no locality to equal it. The valley is about 50 miles long (east and west) and averages about 18 miles wide, is almost surrounded by mountains, and appears to the eye perfectly level, although in fact it slopes about ten feet to the mile to the south and west. At  $33\frac{1}{2}^{\circ}$  north latitude, it lies almost exactly on the line with Charleston (S. C.) and Tripoli; but, with an altitude of about 1,100 feet, it has a clear, dry, bracing atmosphere, remarkably free from humidity and dust, and an average rainfall (thirteen years, U. S. Weather Bureau) of only 7.21 inches — though last year showed only 3.10 — which is distributed through several, sometimes through all, the months in the year, and, coming in "showers," leaves only a slight humidity which disappears very rapidly.

The mean "relative humidities" for the twelve months, beginning with August, 1895, read (U. S. W. B.) 44, 42, 53, [68, 58, 55, 45, 38], 33, 28, 26, 49 (without fractions); but the 5 A. M. readings for the year give a mean of 59.73, while the 5 P. M. readings show a mean of only 28.73. Compare those figures for the five winter months (enclosed in brackets) with those of any resort north of the equator, and you will see how favorable they are. Neither fog nor dew is ever seen here, and the average number of "sunshiny" days is reported at 350, while the actual sunshine of the last year is given as 87.25 per cent. In view of such dry and sunny weather, the comparative absence



of dust is very remarkable and most important in this connection, but is due, I presume, to the character of the soil and the usually very gentle breezes—the average hourly wind velocity (three years) being only 2.6 miles. The occasional high winds (which, coming from the east bring clouds of sand from the desert, and constitute the “sand-storms” of Arizona), only last for from fifteen to thirty minutes, and are invariably followed by rain in “showers,” which, though cooling the air, bring no sudden changes. In fact, all the changes of weather and temperature are gradual and rhythmical—not sudden. Even the great blizzard that froze up the entire Atlantic coast, did such enormous damage to Florida, was so keenly felt in the Gulf States, and even nipped Southern California, passed through *Northern Arizona*, where the altitude is much greater (Prescott, 5,600 feet), but scarcely depressed the normal temperature of this valley, and produced no effect whatever on the palms, vegetables and flowers. And the monthly “actual” barometric means from August, 1895 to July, 1896, inclusive, only vary from 28.65 (August and June) to 28.95 (December)—a truly wonderful uniformity.

At the eastern end of the valley, the sand of the desert gives place to a thick, heavy “adobe” (clay), and this extends even into the eastern limits of the city; but all to the west of this the soil is a rich sandy loam, into which the rains quickly sink, leaving the surface clean and pleasant for walking or driving, and which is of marvellous fertility wherever it is sufficiently supplied with water; and this is amply provided by an extensive system of irrigation, the eight main canals aggregating about 190 miles. I think every physician looks with distrust on an irrigated region as a residence for consumptives, and with good reason at low altitudes and near the sea-coast; but the figures I have already given will show positively that there can be no danger from this source. And this deep, rapidly drained, sandy loam provides the very best and safest soil upon which to live.

As to temperatures, I must confess that I consider the dry thermometer a most misleading little instrument, as our sensations depend so much on the character of the air, the humidity, presence or absence of wind, our own physical condition and clothing, etc., and the wet-bulb—so long as we are not swathed in wet clothes and rotated—as even more so; but here are the U. S. W. B. figures for the year, August, 1895 to July, 1896, inclusive, without fractions:

	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
Mean actual T.	89	82	72	57	49	54	56	62	64	74	88	89
Mean sens. T.	70	64	59	49	41	44	44	48	48	54	64	67
Lowest T.	65	47	48	34	23	30	28	34	38	45	61	62
Highest T.	110	107	93	83	78	79	82	92	89	110	115	113
Sunshine %.	85	89	88	81	88	77	87	75	91	89	98	92

It is only fair to point out that last year was below the average in rainfall and, therefore, above the average in sunshine; but, with that warning, it need not be misleading—for it only means that there were not quite so many showers, which are as apt to come in July and August (a northern extension of the Mexican rainy season) as in January and February (when we come

within the southwest quadrants of the “low” pressures sweeping down the Mississippi valley). And the fact is that the eight months of October to May inclusive, are one long New England “Indian summer,” with cool and bracing nights and mornings that make an open wood-fire so charming, and (with only a few exceptions) sunny and warm days that compel one to out-door life, and make even a light overcoat oppressive—until sunset.

Many people come here only for the winters, but a large proportion of them make a grievous mistake in not remaining through the summer—even if only one. Yes, it is hot—blazing, scorching hot! But—and here is just where the thermometers get in their lies—while the “sensible temperature” to the body is far above the 64, 67, 70, 64, recorded by the wet bulb as above, so it is also far below the 110, 115, 113, 110 and 107 shown by the dry bulb; and, in truth, those last high temperatures are *less* “trying” here than 90° in New England and New York, or (often) 80° in Philadelphia or Washington. And this heated atmosphere, so pure and dry and charged with ozone—for thunder-storms are of almost daily occurrence in the surrounding mountains, although they only occasionally spread over the valley—has a tonic and exhilarating quality that is simply invaluable in cases of pulmonary disease, and of certain forms of heart trouble and neuralgia. Nor—unless there be already an excessive debility—does the heat of the day leave a sense of exhaustion. The evenings and nights are almost always of surpassing beauty, with such brilliancy of starlight and moonlight as can only be found in such an atmosphere; and all out-doors is swarming with humanity—not sweltering and gasping, as so often at the East, but—laughing, singing, dancing, bubbling over with the exuberance of healthy and joyous spirits.

To physicians I need not explain what effects such a climate *must* produce on all pulmonary diseases—whether bronchial, interstitial, phthisical or asthmatic; on heart diseases that have advanced to dilatation with the consequent enfeeblement of circulation, contracted capillaries and congested internal organs, with all the collateral miseries thereby induced; on many forms of indigestion, particularly those arising from catarrh or disturbed circulation; and on neuralgias; but I may urge upon them the need of sending patients *in time*, before it is too late for any climatic conditions to help them. This may be received with impatience as an old and needless exhortation, but here we see so many who have come too late—only to die; and there have been several instances in which they died within twenty-four hours after arrival! But they will be interested in hearing that the once-called zymotic diseases are rare here, and very mild in type when they do occur; and that cholera infantum is practically unknown.

Phoenix has about 12,000 inhabitants; wide, well-kept streets, many of which are lined with fine trees; electric cars, lights and telephones; graded schools; all sorts of churches; three banks; excellent shops; several hotels—the largest and finest of which will open on November 15th, for the first time, with nearly one hundred rooms already engaged; many boarding-houses and innumerable furnished rooms; and—perhaps this last should have come first—a good sewerage-system and a most excellent water-supply derived in unfailing quantity from one of Arizona’s “sunken rivers.” The roads are level and good, livery horses

and teams plentiful and not dear, and the views—the vividly green “alfalfa” (a kind of clover) fields, the river, and the various mountain ranges, distant from six to thirty miles—most charming. And in, around and above all, the clear, pure, dry, sunny, invigorating atmosphere, making the whole world beautiful, and life worth living.

### CHOLERA INFANTUM.

BY MARSHALL L. BROWN, M.D., ALLSTON, MASS.

HAVE we a specific remedy for cholera infantum?

Cholera infantum is a disease of the hot summer months, only affecting children fed artificially upon milk or milk preparations. It is a rare disease compared with the fermental or other summer diarrheas. It is not known to affect infants wholly fed from the breasts of healthy mothers. It is caused by tyrotoxin or by poisonous proteids evolved by the growth of toxicogenic bacteria in milk or milk foods.<sup>1</sup>

These poisonous products, which may be in the milk or milk foods, already preformed when injected, produce in the alimentary canal intense irritation, hyperemia, vomiting, diarrhea, cramps and vaso-motor paralysis, resulting in very great transudation of serum,<sup>2</sup> which is the serum from the blood.

Every case of cholera infantum is one of poisoning from the elaboration of chemical products by the growth of bacteria in milk.<sup>3</sup>

**Symptoms.**—From being perfectly well, or having suffered from a dyspeptic diarrhea the child begins to vomit and purge. These may persist incessantly. The color fades from the cheeks; a deadly pallor spreads over the face; the fontanels become much depressed; the eyes are sunken; anxiety is in every feature. The food and everything taken is quickly rejected; then bile-colored mucous is thrown off. The frequency of the vomiting increases. The stools first contain fetid and undigested foods, are acid; then watery and copious; and finally become almost wholly of serum, are colorless, alkaline, possessing an odor peculiar and characteristic. The flesh melts away from the little patient as it does in cases of Asiatic cholera. The skin is cold and clammy, pulse weak, thready and rapid; respiration irregular and hurried. Exhaustion quickly comes. The temperature is usually from 102° to 104°, and in fatal cases rises to 107° to 108°. The child moans, falls into a comatose state, preceded sometimes by great restlessness, delirium and convulsions. Thirst is excessive, abdomen sunken. The temperature may become subnormal. The child, in an algid state, lies in a stupor, eyes half-open, apparently covered with a film. Urine in severe cases suppressed. Death may result in forty-eight to seventy-two hours. The termination of most cases, unless the remedial measures taken are successful, is death.

When the above symptoms have ensued, the poisons have accomplished their characteristic and pathological action. Nature has by the vomiting and diarrhea done her best to eliminate and throw off the poisons. It is the continued action of these poisons upon the nervous system and, through that, upon the stomach and bowels that we wish to counteract and inhibit.

<sup>1</sup> Starr: Acute Milk Infection, by Victor C. Vaughan.

<sup>2</sup> Koch: Pediatrics.

<sup>3</sup> Starr: Acute Milk Infection, by Victor C. Vaughan.

The condition then existing is one of extreme hyperemia of the whole alimentary tract, a paralysis of the vaso-motor system of nerves presiding over this tract, resulting in a continued transudation of serum from the blood, vomiting, diarrhea and shock.

The remedy which will lessen and obviate the effects of the shock, and by its action upon the vaso-motor nerves stop the transudation of serum, and thereby check the diarrhea and vomiting, will meet, completely, the most pressing and important indication in such cases.

Potassium bromide is absorbed by the mucous membrane of the entire alimentary canal when it is placed in contact with that membrane in proper solution.<sup>4</sup> When so taken into the blood, it remains unchanged, and passes out of the system without decomposition, eliminated by the skin and kidneys. Its remedial effect is due to its action upon the vaso-motor system which controls the contraction of the arterial vessels. The larger the dosage the more intense and longer its action upon the vaso-motor system. Its action is primarily exerted upon that part of the vaso-motor system which causes the contraction of the arterial vessels, thus reducing the supply of blood to all the tissues, but acting more especially upon those which are superabundantly supplied with blood. It increases and exaggerates the arterial tonicity, tetonizes the arterioles, slackens or arrests the circulation, and produces an oligemia of all the tissues, and consequently of the alimentary canal.

Thus we see that the action of potassium bromide completely antagonizes the action of the poisonous proteids which cause cholera infantum, and is therefore a specific remedy when administered in season and in that dosage which will produce its physiological action.

The proper nourishing and sustaining of the patient and supplying the necessary fluids to take the place of the great quantity lost is an essential after-part of successful treatment.

An experience of twenty-five years' practice in the use of potassium bromide has given to me satisfactory results and proved conclusively that it is a remedy of great value in these diseases, and renders more effective service than any and all other remedies combined.

### Clinical Department.

#### MULTIPLE FIBROIDS OF THE UTERUS.<sup>1</sup>

COMPLICATED WITH BROAD LIGAMENT CYST OF LEFT SIDE AND NUMEROUS THIN FIBROUS SACS FILLED WITH CLEAR FLUID, APPARENTLY FREE IN THE LOWER PERITONEAL CAVITY.

BY W. H. BAKER, M.D.

MRS. N. C. W., American, forty-eight years of age, and a resident of northern New Hampshire, consulted me February 26, 1896. She had been married twenty-three years, but had never been pregnant. It had been ten years since she had begun to notice any enlargement of the abdomen. This enlargement had

<sup>1</sup> Reported at the Boston Society for Medical Improvement, March 9, 1896.

<sup>4</sup> Physiological Action of Potassium Bromide, by Robert Amory, M.D., June, 1890.

slowly and steadily increased in that time; still she had been able to do her housework until within two months. Her principal complaints were backache, pain in the groins and a sensation of crowding in the upper abdominal region. The menstrual periods had for the past few years occurred too frequently, the regular time being anticipated by a few days; the time of its continuance lengthened to a week, and the amount increased to twenty thoroughly saturated napkins. There had also been for several years an intermenstrual flow, lasting a few days, but not sufficient to require protection. Aside from her local trouble, her general health was fairly good, although her sleep was much disturbed on account of the crowded feeling to which reference has been made.

The operation of abdominal hysterectomy was performed on February 29th. When the abdomen was first opened, numerous cysts of thin walls, apparently filled with clear fluid and free in the peritoneal cavity, were seen and removed. The size of these varied from the size of the thumb to three or four times that size. An examination by Dr. Whitney was made and reported upon as follows: "Thin, fibrous sacs filled with clear fluid, rather mucilaginous, and giving an abundant precipitate of mucin. Microscope showed connective-tissue corpuscles and fibres in sac walls. An edematous condition of peritonic adhesions, or possibly from folds of the peritoneum itself."

The cyst of the broad ligament complicated the operation not a little on account of the increased difficulty of tying off the ligaments and securing the ovarian and uterine arteries of that side. Baers's method of treating the stump was followed and the folds of the peritoneum, anterior and posterior, closed over the whole. The tumors weighed five and one-half pounds. The patient is making a good recovery.

The case seems of interest as showing —

- (1) A not infrequent cause of sterility in women.
- (2) A class of fibroids which are least amenable to electrolysis.
- (3) The infrequency with which in my experience these free, cyst-like bodies are found in abdominal operations.

## Medical Progress.

### REPORT ON SURGICAL PROGRESS.

BY H. L. BURRELL, M.D. AND H. W. CUSHING, M.D.

#### THE STREPTOCOCCUS AND ANTI-STREPTOCOCCIC SERUM.

MARMOREK,<sup>1</sup> working in the same line as the diphtheria and tetanus-serum theories, produced an anti-streptococcic serum which gave the following results in cases of erysipelas:

The mortality before its use was 5.12 per cent. During the period it was used there were 306 cases: 165 of these that were considered severe were injected. The mortality fell to 1.63 per cent., and if certain cases were left out that died from other causes, it would be only 1.2 per cent. A weaker serum was then employed, when the mortality rose to 4.82 per cent.

If the dose was sufficient, improvement in the sub-

jective and local symptoms took place five to twelve hours after the injection. The temperature sank rapidly, and came to normal twenty-four hours afterward. If the temperature remained high, the dose was repeated at the end of twenty-four hours.

Albuminuria was never present in patients treated with the serum, and if it was previously present, it disappeared from twenty-four to forty-eight hours after the treatment commenced.

The dose varied, according to the patient and the severity of the disease, from 10 c. c. to 20 c. c. in severe cases. The total dose never exceeded 120 c. c. in ten days.

Gratifying results were also obtained in cases of puerperal fever, especially where the infection was not mixed, but a pure streptococcus infection.

#### FAT EMBOLISM.

Dr. Groube<sup>2</sup> reports a case of death from fat-emboli, following a serious accident. The review of the literature on this subject, and the observations made in the case reported, led the author to the following conclusions:

- (1) Although cerebral fat-emboli are very rare, the danger and possibility of their occurrence should not be lost sight of in cases where there are large lesions of the skeleton and soft parts.
- (2) In all cases of severe contusion and fracture, the author advises the examination of the urine for fat; these examinations should be made every day for three weeks.
- (3) The quantitative estimate of the amount of fat in the urine permits one to judge of the amount of free fat circulating in the blood. It is probable that these amounts are in inverse ratio, the more that is excreted the less remains in the system. The diminution of the amount of fat in the urine, and an increased difficulty in respiration, are indications of approaching danger.
- (4) The author calls particular attention to the difficulty of respiration shown by these patients and their lowered temperature. These signs should put one on his guard.

(5) The literature of the subject and the mode of origin of these emboli indicate complete rest as the treatment for the fractured limb. The general rule for the treatment of fractures, that is, complete immobilization of the fragments, is applicable to these cases; and where in compound fractures it is necessary to reapply the dressings, it should only be done as frequently as is absolutely necessary.

(6) Massage should not be employed, as it tends to drive the fat into the tissues. In the case of contusions of the soft parts, massage should be applied only at a late stage when the extravasated blood will not disappear.

(7) Frequently contusions produce vast cavities filled with blood and liquid-fat. In these cases, to prevent this complication, the author advises that these sacs be incised and evacuated, which also hastens the recovery. This evacuation renders the formation of emboli difficult, as it relieves the internal tension. This relief of tension should be also afforded after the resection of a joint.

(8) In refraining from amputation, the danger of fat-emboli should be considered.

(9) As soon as emboli form, all assistance that is

<sup>1</sup> Annales de l'Inst. Pasteur, November 7, 1895; Cent. fur innere Med., December 28, 1895; American Journal of Medical Sciences, May 1896, p. 600.

<sup>2</sup> Rev. de Chir., July, 1895; American Journal of Medical Sciences, March, 1896, p. 307.

possible should be given to the kidneys to aid them in the elimination of the fat, and to assist the heart in its action in compensating for the condition of the lungs. These results are obtained to a certain extent by the use of cardiac stimulants and diuretics, more especially digitalis.

#### ACTINOMYCOSIS RESULTING FROM FOREIGN BODIES.

E. Hummel, Tübingen,<sup>3</sup> considers that this disease is not communicated directly from animals to man, nor by eating the flesh or milk of affected animals, but that both man and animal are infected by foreign bodies. He finds on investigation only twelve cases where the mode of infection is accurately known, and that in these it was a foreign body, usually a piece of barleycorn or some seed of grain. The patients were workers in grain, who were in the habit of chewing it. The piece of grain was forced through the mucous membrane or into the cavity of a carious tooth. Foreign bodies of this kind are often found in animals affected by the disease.

#### STEAM AS A HEMOSTATIC.

Suegirow, of Moscow,<sup>4</sup> has for eight years been using steam to control bleeding during operations on the cavity of the uterus. It is used as follows: The uterus is dilated. A fenestrated catheter is passed into the cavity. A smaller tube connected with the steam-supply is passed into the catheter. The steam (temperature 100° C.) is thus brought in contact with the bleeding surface. In from one-half to one minute a thin layer of albumin is formed. The action is hemostatic, caustic, deodorizing. It is reported to be painless. In many experiments on animals this hemostatic action had been shown during operation for partial resection of the liver, spleen, kidney and lung. Its action was found constant and reliable. In abscesses the odor was destroyed and healing favored. The process of repair is not delayed. In parenchymatous organs the surface appears smooth and shining.

#### PENTAL AND ITS ADMINISTRATION.

Dr. Prince Stallard read a paper entitled "Pental, its Administration in 150 Cases, with an Account of one Death whilst under its Influence," before the Society of Anesthetists.<sup>5</sup> He states that pental is a purified form of amylene which is prepared by C. A. F. Kahlbaum, of Berlin, at the suggestion of Professor Mering. In many respects, especially in its physiological and clinical action when inhaled by man, pental resembles its predecessor amylene. Dr. John Shaw, to whom we are indebted for most of our knowledge of the physiological action of amylene on the human subject, states the quantity of amylene to narcotize the human subject to be from three to four drachms. Not nearly this quantity of pental is required. Pental is a clear, mobile, colorless fluid, having no marked taste, but producing a slight burning sensation when placed on the tongue and a slight irritation at the back of the throat which, however, soon disappears. It is exceedingly volatile and highly inflammable: has no escharotic action when dropped on the skin; and its smell is somewhat pungent, but not disagreeable, patients never complaining of its odor.

The average time required to produce anesthesia was 56 seconds and the average anesthesia obtained

lasted for 76 seconds. The pre-anesthetic stage varied from 30 to 120 seconds and the anesthetic period from 25 to 210 seconds. The advantages claimed for pental are: (1) longer anesthesia than nitrous-oxide gas yields; (2) simple apparatus; (3) no struggling, coughing, or dislike to the drug; (4) small amount required, average two drachms; (5) rapid recovery; and (6) the absence of after-effects. The disadvantages are: (1) insidiousness of its action—an overdose can easily be administered; (2) noiseless and shallow breathing; (3) screaming; (4) sudden cessation of respiration; and (5) sudden cardiac failure.

#### ANESTHESIA AFTER COCAINIZATION OF NARES.

Gerster, in collaboration with Mayer and Theobald, in an article on this subject,<sup>6</sup> has found that as a result of the observations made in 100 cases of anesthesia, the cocaineization of the nasal mucous membrane, preceding and during surgical anesthesia, considerably diminishes the distress and oppression felt by the patient at the beginning. There was among the cases recorded that of a physician, who had been etherized before, and to whom the process then was extremely disagreeable. This time, his sense of smell being dulled, he experienced no feeling of suffocation, no tickling or irritation inviting coughing or retching; and his judgment was that the new process was certainly a great improvement over older methods.

In this, as well as in almost all the other cases (excepting those of confirmed alcoholics) the observation was made that, at the beginning of narcosis the patients manifested less reflex irritation than usual; that they entered insensibility more rapidly and quietly, with less struggling, coughing, and nausea; that, especially when ether was used, the mask could be approached to the face of the patient much quicker, without opposition or resistance. In conformity with this, the later stages of anesthesia were also more quiet and more free from disturbing interruptions than usual. But here, again, habitual alcoholists formed an exception.

On the other hand, perhaps ten times, and in about from twenty to twenty-five minutes after the first application of cocaine, with no external reason, such as for instance, profuse hemorrhage, a marked acceleration of the pulse-rate, with facial pallor, was observed, followed by profuse sweating, probably the effect of cocaine. It seemed to the authors that cocaine anesthesia of the mucous membrane also tended to diminish the depth of the respiration.

As to the after-effects, they have derived the impression that in the cases observed there have been less nausea, vomiting, headache and general malaise than is the rule in ordinary anesthesia. It must be said, however, that in a few instances patients who did not vomit at all during the first twenty-four or forty-eight hours vomited a great deal on the second and third day without any recognizable cause.

As to the anesthesia of alcoholics, where there is much need of improvement, Rosenberg's method does not afford any marked advantage over older methods.

On the whole, it is safe to conclude that in view of the ease and simplicity of the procedure, of the absence of apparent risk, and on account of the undeniable diminution of the trying subjective effects upon

<sup>3</sup> Beiträge zur klin. Chir., 1895, Bd. xiii, Hf. 2.

<sup>4</sup> Deutsch. med. Woch., 1894, No. 32.

<sup>5</sup> Lancet, vol. 1, 1896, p. 710.

<sup>6</sup> Annals of Surgery, January, 1896, p. 1.

the patients caused by the use of cocaine upon the nasal mucous membrane, its extended and systematic trial deserves encouragement.

#### A CONTRIBUTION TO THE THEORY OF CEREBRAL CONCUSSION.

S. P. Kramer, who was associated with Victor Horsley in his research on gun-shot wounds of the cerebrum, noted that in certain instances the bullet did not penetrate the cranium. The phenomena produced must be ascribed to cerebral concussion. He has worked out these experiments and contributes a valuable article,<sup>7</sup> the conclusions of which are the following:

A blow to the head produces a momentary increase of intra-cranial tension and consequent compression of the brain as a whole.

The effect of this compression would be to cause an interference with the blood-supply to the entire brain, and this is sufficient to account for the primary symptoms of cerebral concussion.

The so-called syncopic death after severe concussion is produced by a paralysis of the respiratory centres, the cardiac centres remaining intact. This fatal result may in many cases be prevented by the prompt institution of artificial respiration.

#### SURGICAL ANATOMY OF THE MIDDLE MENINGEAL ARTERY.

S. C. Plummer, in an article on this subject,<sup>8</sup> states, that, from the results of his researches, he is justified in drawing the following conclusions:

(1) That the course and distribution of the middle meningeal artery are subject to wide variations.

(2) That after the artery leaves the foramen spinosum there is no location at which a portion of the main trunk or one of its terminal branches has a constant and defined position, except where the anterior branch crosses the sphenoparietal suture on to the anterior inferior angle of the parietal bone.

(3) That a trephine opening one inch in diameter made immediately back of any portion of the coronal suture will almost invariably reach the anterior branch or a branch from it.

(4) That in a great majority of cases there is a main trunk of the artery within the cranium.

(5) That the anterior branch may be derived from the orbital branch of the lachrymal branch of the ophthalmic.

(6) That the parietal bone is supplied to slightly greater extent by the anterior than by the posterior branch.

(7) That the blood-supply to the dura mater traverses as many and as pronounced curves as that to the pia mater.

(8) That while there is a tendency to symmetrical arrangement on the two sides of a given skull, the exceptions to this are so numerous that we can make no practical use of this symmetry.

(9) That in a majority of cases the anterior branch is inclosed in a canal at the anterior inferior angle of the parietal bone.

(10) That in locating the anterior branch, that site is more advantageous which reaches it high enough to prevent its escaping in case it originates from the orbital branch, and to expose or lie above the orbital

branch when it exists merely as a communicating branch; and which involves the bony canal and the ridge along the lower end of the coronal suture least frequently.

(11) That for locating the anterior branch, Kronlein's method is the most advantageous.

(12) That no method will locate the posterior branch with much certainty.

(13) That in locating the posterior branch one must carefully avoid the region of the lateral sinus.

(14) That Steiner's method is the most advantageous for locating the posterior branch.

(15) That we have in the Hartley-Krause osteoplastic flap the only method fulfilling all the requirements for an ideal exposure of the middle meningeal and its branches.

(16) That shutting off the circulation of the middle meningeal extracranially is an essential step in the performance of Rose's operation for the removal of the Gasserian ganglion.

#### INTRACRANIAL RESECTION OF THE TRIGEMINAL NERVE.

Bernard v. Beck reports three of these cases operated upon by Czerny according to the "Hartley" method.<sup>9</sup> The nerves were found to leave the ganglion as loose bundles of fibres imbedded in the dura mater. They have to be dissected out very carefully, especially the first branch, which is imbedded in the wall of the cavernous sinus and in close proximity to other nerves. Section of the nerve is followed by anesthesia of one side of the face, paralysis (and atrophy) of the muscles of mastication, asymmetry of the jaw, edema of the face, paralysis of the tensor tympani and unilateral deafness in consequence. The anesthesia gradually disappears, beginning at the border of the anesthetic area. The ultimate result was good in all cases. One case was complicated by a profuse hemorrhage, which compelled the operator to pack the wound and finish the operation two days later when the bleeding was controlled. Temporary headache and neuralgia from pressure on the proximal end of the nerve occurred, but was not of long duration.

This method was also discussed by the New York Surgical Society in October, 1895, by Gerster, Abbe, Bridden, Wilby, Meyer and others, but the discussion was principally devoted to operative technique.<sup>10</sup>

#### HEMORRHAGIC CYSTS OF THE THYROID GLAND.

Bradley, in an article on "Hemorrhagic Cysts of the Thyroid Gland,"<sup>11</sup> makes the following conclusions:

(1) All the features peculiar to the gross cysts of the thyroid gland which possess fluid contents appear to indicate that they are essentially of hemorrhagic origin.

(2) While these gross cysts would seem more especially to occur in glands which already present the features of parenchymatous goitre, the theory of Wolfier that they originate as a consequence of spontaneous rupture of the vesicles is unsatisfactory.

(3) It would seem more probable that these large cysts are due to rupture, traumatic or otherwise, of some of the vessels of the organ. The frequent signs of small hemorrhages in cases of parenchymatous

<sup>7</sup> *Annals of Surgery*, February, 1896, p. 1633.

<sup>8</sup> *Loc. cit.*, May, 1896, p. 540.

<sup>9</sup> *Beiträge zur klin. Chir.*, Bd. xiii, Heft 3.

<sup>10</sup> *Annals of Surgery*, 1896, vol. xxiii, p. 58.

<sup>11</sup> *Journal of Experimental Medicine*, vol. 1, July, 1896, p. 401.

goitre (without evidence of associated gross change in the surrounding vesicles), the structure of the organ and its exposed position, all appear to favor this view.

#### LIGATION OF BOTH EXTERNAL CAROTIDS FOR INOPERABLE NASO-PHARYNGEAL SARCOMA.

Dr. Dawbarn,<sup>12</sup> of New York, treated a patient suffering from a large, rapidly growing, very vascular sarcoma, situated in the naso-pharynx, by the above method. Extirpation was considered contraindicated on account of the danger of a fatal hemorrhage. Both external carotids were ligated. Three months later the growth was found to be one-third smaller than at the time of the operation, and is still diminishing in size. It is now in a condition that permits an attempt at extirpation. This method is worthy of consideration as a preliminary step for operations involving areas supplied with branches of large arteries where dangerous hemorrhage is feared.

#### TREATMENT OF EMPYEMA IN CHILDREN.

N. M. Kowesnikof, of the Wladimir University in Kiew,<sup>13</sup> after a review of his personal experience and an investigation of 286 cases collected from Russian and other medical literature, has reported the following conclusions:

(1) Empyema in children should be treated by pleurotomy combined with costal resection as early in the disease as possible.

(2) The operation is not difficult, and, by itself, never causes deformity of the thorax or weakness of the respiratory function of the lungs.

(3) When an early operation of this character shall be extensively adopted as the proper treatment of these cases, fistulæ as sequelæ from empyema will be rarely seen.

#### SURGERY OF THE LUNG.

Paul Reclus, at the Ninth French Surgical Congress,<sup>14</sup> reviews this subject and concludes:

(1) That surgical interference in tubercular cases must be proscribed.

(2) In primary cancer no conditions can occur in which pneumonectomy would be feasible.

(3) As regards cavities, incision is sometimes a justifiable palliative measure.

(4) Resection of a portion of the lung for hemorrhage is a last resource; that its success in three reported cases requires the surgeon to bear the procedure in mind.

(5) Hydatid cysts, gangrene, and abscess are all benefited by incision. The intervention in these cases is radical and often saves the life of the patient.

#### TREATMENT OF PHTHISIS BY PNEUMOTOMY.

Quincke,<sup>15</sup> after considering the surgical treatment of simple and putrid pulmonary abscesses, has now investigated those operative cases of abscess resulting from pulmonary tuberculosis. He finds that treatment of a cavity by puncture and injection of various substances supposed to exert a curative effect rarely shows any especial success. When the cavity is to be opened after resection of a rib or ribs, he would recommend that the operation be done in two stages,

in order to permit the lung to become adherent before the abscess is opened.

Of the ten cases collected by him, the operation wound healed in only three. In the remaining cases either the end result was unknown, the patient died of the tuberculous process, or a pulmonary fistulæ remained.

Extirpation of a portion of the lung, as performed by Doyen, Lawson, Tuffier, and Reclus, he thinks too dangerous; and the complete removal of the disease is too uncertain to recommend such an operation.

Quincke is led by his own experience to believe that the healing of simple abscesses may be favored without actually opening them, if the adjacent portion of the chest wall is resected so as to influence favorably the cicatricial contraction of the lung. He proposes the same treatment for tuberculous cavities. Spengler and Bier have each treated one case according to Quincke's recommendation. One (to be subsequently reported) was successful. Bier's patient showed improvement for ten months. Then new cavities formed and the patient died shortly after a second operation, from subcutaneous emphysema and the effects of chloroform.

Quincke concludes that in such cases he would certainly employ this method and only in exceptional cases open also the abscess cavity.

#### SOME INTERESTING STATISTICS ON THE RADICAL CURE OF HERNIA.

Stensson and Erdmann<sup>16</sup> report one death in 106 operations for the radical cure of hernia. The death occurred on the tenth day. The autopsy showed acute enteritis and nephritis.

Macewen, in 98 operations reported one death, which was due to scarlatina.

Bassini had one death after 250 operations. The fatal result was due to pneumonia, which supervened after the wound was entirely healed.

Kocher (second report) records 119 operations with one death, which was caused by pulmonary embolism on the fifteenth day.

Lucas Championnière reports 266 operations with two deaths—one from internal strangulation, the other from pulmonary congestion.

Kocher (third report) relates the cases of 192 patients on whom were done 220 operations without a death.

As to the recurrences, Lucas Championnière has had 17 recurrences after 275 operations, but only 141 of the patients had been seen more than two months after the operation.

Kocher reports 15 recurrences after 220 operations, 174 of the patients having been seen some considerable time after operation.

Bassini has had seven recurrences out of 149 patients seen six months after operation.

Macewen knows of but one recurrence after 98 operations.

The danger of the operation is from infection and intestinal and pulmonary complications. The principal cause of recurrence seems to be that tendency to abnormal laxity of tissue that was the original etiological factor.

Where recurrences happen, the whole benefit of the operation is not lost. The recurrent hernia comes

<sup>12</sup> *Annals of Surgery*, 1896, vol. xxiii, p. 189.

<sup>13</sup> *Centrbl. f. Chir.*, 1<sup>re</sup> 6. Bd. xxiii, s. 889.

<sup>14</sup> *La Médecine Moderne*, October 23, 1895; *American Journal of Medical Sciences*, April, 1896, p. 482.

<sup>15</sup> *Centrbl. f. Chir.*, 1896, Bd. xxiii, s. 890.

<sup>16</sup> *Revue Médicale de la Suisse Romande*; *American Journal of Medical Sciences*, April, 1896, p. 479.



down slowly, is small and reducible, can easily be retained by a bandage, and usually causes no pain.

#### RADICAL OPERATIONS OF REDUCIBLE HERNIÆ.

Greiffenhagen,<sup>17</sup> after discussing the position of this operation at the present day, says the mortality of non-incarcerated herniæ that are not complicated by the resection of intestine or mesentery is rapidly decreasing, until at the present day the mortality is practically *nil*, and all patients, or nearly all, recover. For instance, Macewen reports 82, Kocher 220, Bassini 239, Boca 250 cases, in which no death occurred. This shows that the radical operation for non-strangulated herniæ is at the present time a harmless operation.

That, however, is not sufficient. What are the permanent results? Especially of inguinal herniæ, do they show permanent cures?

The percentage of relapse, as given by known authorities of their operations, is the following: Schede, 10 per cent.; Kocher, 8.6 per cent.; Kuster, 6 per cent.; Wolfier, 5 per cent.; Bassini, 3 per cent.; Macewen, 0.6 per cent.; and Kocher, by his latest method, 0 per cent., or 100 per cent. of permanent cures. Of course, the observation of these cases has only been for a limited length of time in some cases; but the two things necessary for the success of the operation are, however, established—its harmlessness and the certainty of a radical, permanent cure.

The present status of the operation has entirely altered the indications for operation. It should be performed in all cases of herniæ that cannot be replaced or are difficult to retain by a truss, and that have shown a tendency to inflammation.

Further, the operation is indicated in the following conditions:

(1) In all free herniæ that are difficult to retain, or are only partially retained by a truss, and where the truss cannot be worn comfortably.

(2) In middle-aged and young persons of the working classes, who cannot afford to buy a good truss and renew it when necessary.

(3) In children, and especially in large herniæ.

(4) Finally, patients should be operated upon if they so desire, and wish to be free from the inconvenience attending the wearing of a truss.

The contraindications are a hernia so large that it cannot be returned into the abdominal cavity, and systemic conditions that contraindicate all forms of operation.

The best results are obtained in small, free, relatively recent herniæ in young persons, in which there have been no adhesions formed and there is not much motion. The greater the amount of adhesion between the sac of the hernia and the canal, the more difficult is the technique and the less are the chances of a permanent cure.

The author is divided in his opinion as to the best operations, preferring, according to the case, Macewen's, Kocher's, Bassini's and Frank's methods.

(To be continued.)

THE FIRST SURGEON TO USE QUININE IN THE FRENCH ARMY.—Dr. Maillot, whose statue General Billot, the French Minister of War, will soon unveil at Briey, was the first surgeon to employ quinine in the French Army.

<sup>17</sup> St. Petersburg. med. Woch., December 28, 1896; American Journal of Medical Sciences, May, 1896, p. 599.

## Reports of Societies.

### BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

J. G. MUMFORD, M.D., SECRETARY.

REGULAR meeting, Monday, March 9, 1896, Dr. C. J. BLAKE in the chair.

Dr. F. M. BRIGGS read a paper on

#### THE TREATMENT OF CERVICAL ADENITIS.<sup>1</sup>

Dr. F. C. SHATTUCK: I think the reader is to be congratulated on the results obtained in these cases. When one contrasts the scars shown us to-night with those which we see oftentimes as the result of operation, and with the still worse scars as the result of no operation, the gland having been allowed to open itself and drain for some time, it certainly is a great advance, and especially in women. As the reader said, cases are very rare in which a general miliary tuberculosis or tuberculosis of the lung eventuates, but the swellings are disfiguring and undesirable, and we do not like the name tuberculosis. Oftentimes glands are seen in people in otherwise apparently vigorous health, the disease seeming to be purely local. In other cases there appears to be more constitutional taint, and where such is present—a certain softness of tissue—general tonic treatment seems to be indicated. Under that the glandular swellings may or may not subside; but in general I must confess that the direct effect of purely medical treatment has not seemed to me very satisfactory. External applications of one kind and another I have tried, and have not got sufficient success to make me want to keep on with agents that are distinctly irritating to the skin, which in themselves are liable to be disfiguring and make the glandular enlargement more evident. We frequently see in pseudo-leukemia a tendency of the glandular swelling to subside spontaneously, and I think it important to remember when we are treating a case of pseudo-leukemia with arsenic that oftentimes there is great oscillation where people are not treated at all.

Dr. H. WILLIAMS: I have seen a good many of Dr. Brigg's cases, and I am able to corroborate all he has said. I think his canula method is a very distinct advance. In my student days we were taught to make a *surgical* incision in contradistinction to the so-called *medical* incision—a long, free incision which almost always left a very unsightly and disfiguring scar, whereas the medical incision was a very short incision which healed by first intention and frequently required to be opened again. Dr. Brigg's method, it seems to me, has steered a middle course. We avoid the long incision and consequent disfiguring scar, and yet are able to keep the abscess freely open by putting in this canula. I think it not only saves a scar very much indeed, but I think it is a great saving of pain for the patient. In one of the cases which I followed, ether was administered and the canula put in and the abscess cavity partly evacuated and done up in an antiseptic dressing and not opened for two or three days; then the canula was taken out and the abscess left to heal by itself. It was practically well when the dressing was taken off, and that child was saved all the expressing of pus and changing of dressing which is usually so painful.

Something has been said about the tubercular char-

<sup>1</sup> See page 561 of the Journal.

acter of these glandular abscesses. It seems to me we regard more of them as tuberculous than is really the case. I think a very large percentage of them are due to other infection. In one of these cases that seemed to be very conclusively shown. The child had a very small eczematous patch on the chin. His brother had a furuncle on the face. They were playing together before the abscess began to develop. Now the chin and lower lip are drained by the submaxillary lymphatic glands, and this abscess came in the submaxillary glands. This would go to show to my mind that there was direct infection from the pus of the furuncle.

DR. PRESCOTT: I wish to report one case I had at the Home for Little Wanderers. A boy of five or six had an abscess about the size of the first case reported, and I obtained one of the canulas from the Dispensary and used it. The gauze was renewed every day, and at the end of four days the canula was taken out. There was no sinus, and nothing but a scab about as large as a silver three-cent piece. The child is now perfectly well, never having had any pain. The pain of dressing it was almost nil, and all the pain there was consisted in the first sharp prick of the knife and putting in the drainage-tube. The result was surprising and very satisfactory.

DR. H. WILLIAMS: I am very much surprised to see how much the photograph exaggerates the cicatrices. In one of the cases shown there was a little scratch on the child's face and that is magnified as well as the scar from the canula. In reality neither of these marks can be detected without the closest scrutiny.

DR. SHATTUCK: Suppose you have one gland which is broken-down, and a chain of other glands. If you open the suppurating gland with a small incision, do you expect to see the other glands disappear?

DR. BRIGGS: In about one-third of the cases they disappear, and in about two-thirds they do not.

I have been asked why I confine the use of this canula to abscess of the neck, instead of applying it to abscess anywhere; why larger instruments of the kind cannot be made to drain an empyema, the abdomen, etc. I do not limit this canula to the neck alone, but use it wherever the pus is near the surface. I have used it a number of times in buboes; sometimes with good results, sometimes with poor results. In a certain proportion of cases of inguinal abscess, the infection is extremely virulent and eats away the tissues with great rapidity. In such cases as these the canula does no good, for although it drains well, it does not prevent the extension of the infection. In other cases the abscess heals quickly and perfectly.

As regards empyema, the abdominal cavity, etc., the canula in its present model cannot be used, for it is too short. After spending many hours in attempting to devise a similar model for pus some distance from the surface, I finally decided that a satisfactory one could not be made. If long enough to be inserted, the spreading of the inner arms would be so great as to be a source of danger in tearing tissues near the point of insertion. I think it a mechanical impossibility to construct a canula upon these lines which can be safely used where the pus is deep-seated.

DR. J. L. MORSE read a paper entitled

#### A STUDY OF THE CHANGES PRODUCED IN THE KIDNEY BY THE STAPHYLOCOCCUS AUREUS.

#### AMERICAN DERMATOLOGICAL ASSOCIATION.

TWENTIETH ANNUAL MEETING, HOT SPRINGS, VA.,  
SEPTEMBER 8-10, 1896.

(Concluded from No. 22, p. 552.)

#### A CASE OF HYPERTROPHIC ROSACEA (PACHYDERMATOSIS) RESEMBLING TUBERCULAR LEPROSY, CURED WITH THYROID EXTRACT.

A paper bearing the above title was read by DR. DYER, of New Orleans, based upon a case occurring in a community where leprosy was so endemic that the differential diagnosis rested between the latter and several other cutaneous disorders. The patient, an Alsatian, sixty years of age, had lived during the last fifteen years almost wholly in Louisiana, engaged in farming. He had always been exposed to the wind and sun in all kinds of weather. Tubercular leprosy was closely simulated by the leonine expression of the face, and only detailed examination enabled its exclusion. The patient's general physical condition was excellent. The backs of the hands, as well as the face were in a keratiform condition, with scaling but with no primary lesions. The skin is thrown up into ridges, arranged in parallel and criss-cross lines. There is extensive scaling with excoriations, which indicate almost constant itching. The color is dull red, and not of the dusky hue which we find in leprosy. Telangiectases as well as tubercles are nowhere present. There is a marked infiltration and thickening, which warrants the designation pachydermatosis. No treatment was of avail until thyroid extract was begun about five months ago. Resorcin ointment was applied locally. After about three months' treatment the rugæ had in large part undergone resolution. Everywhere the skin, formerly tense in its infiltration, was impressible, and scarcely edematous under the finger. A normal flesh color replaced the deeper red.

The ready response to thyroid medication, and the prompt resolution of so chronic a condition, would alone make the case interesting. The changes were limited to regions exposed to view, which was an additional factor in excluding leprosy.

DR. WHITE said the case did not recall any ordinary pachydermia which he had seen. He asked if there were not evidences of myxedema in the case.

DR. DYER replied in the negative.

DR. DUHRING said he failed to understand how the diagnosis of hypertrophic rosacea could be made. The term pachydermatosis seemed to him quite appropriate.

DR. JACKSON thought the case appeared to be one of mild myxedema.

DR. FORDYCE concurred in this view.

DR. DYER, in closing, said that he had changed the diagnosis to rosacea after studying the plate from the Baretta Museum collection. There was no suggestion of cellular edema. The hypertrophy had developed gradually, and the affection had lasted about nineteen years. The thyroid gland showed no enlargement.

DR. LOUIS A. DUHRING read a communication on THE RELATION OF DERMATITIS HERPETIFORMIS TO ERYTHEMA MULTIFORME AND TO PEMPHIGUS.

The conclusions arrived at were (1) that dermatitis herpetiformis was in most instances a disease with well defined, tolerably constant, clinical features; (2) that in most instances it was more closely allied in nature to

erythema multiforme than to any other disease; (3) that the bullous variety of dermatitis herpetiformis possessed features that resembled those of pemphigus vulgaris, from which latter disease, however, it differed in the peculiar inflammatory and herpetiform character of the cutaneous lesions, as well as in the tendency to polymorphism, the irregular evolution of the lesions, and in its course.

DR. FORDYCE said we had been unable to classify or to diagnosticate certain cases of recurring eruption of multiform type, frequently leaving pigmentation behind, until Dr. Duhring had given us the "dermatitis herpetiformis," which all now recognized. In a case recently observed there was a chronic nephritis, which was possibly caused through retention in the system of chemical products which caused skin irritation.

DR. JACKSON had been thoroughly in accord with Dr. Duhring's previous claims for this interesting disease. Many reported instances of pemphigus belonged here.

DR. WHITE thought the term "multiformis" far better. There were variations in different recurrent attacks in the same individual. The term "herpetic" seemed a misnomer, the type being exceptionally that of the lesion characterizing herpes. The unlimited duration of lesions was wholly unlike the self-limited duration of the lesions of herpes. He saw no more reason for calling the disease neurotic, or an expression of herpetiformity, than for applying the same terms to eczema. He regarded the condition as a disease by itself, but could not agree in saying that individual cases can be so easily distinguished from pemphigus. In observing a case over any considerable time, we should always be able to make a diagnosis.

DR. ALLEN said there had been some misunderstanding about Dr. Duhring's exact meaning upon certain points, which the paper had made clear. He had always thought multiformis the more appropriate term if either were to be employed, but advocated the adoption of the designation "Duhring's disease," which would do away with all discussion, and give the credit due to this observer. It should be remembered that in the beginning three or four different primary lesions may occur, and yet none of them closely resemble any of the ordinary forms of herpes or zoster. He knew of no reason for saying the distribution of lesions followed the course of nerves, any more than we should say they followed the lymphatic or blood-vessel distribution.

DR. ROBINSON said if the term dermatitis was to be used at all, he strongly favored the connection in which Dr. Duhring had employed it. Dermatitis multiformis meant nothing at all. He was surprised that Dr. Duhring should use the argument of its neurotic nature as if this were a generally accepted view. He most certainly believed it not so. Personally he looked upon it as a toxic disease manifesting itself through the blood-vessels or the nervous system.

DR. DUHRING, in closing, said it was his belief that the causes were varied. Dr. Robinson had spoken of cases which seemed to be infectious. One could not always say just what the cause was, herpetiformity being an essential feature. The term not meaning, however, a resemblance to herpes simplex or to herpes zoster, he thought his designation preferable. "Multiformis" might be applied to eczema. He was willing to admit a certain relationship in the symptoms, and probably also in the etiology, to pemphigus, but a cor-

rect diagnosis could be made after proper observation. He had only said that the cutaneous nerves were implicated and had never seen evidence of the lesions following the course of certain nerves. The implication of the cutaneous nerves gave rise to the peculiar appearance described by the term "herpetiform."

DR. FORDYCE, of New York, showed colored drawings, and described an

#### ERUPTION FROM THE LOCAL USE OF IODOFORM.

The lesions of bullous, papular, tubercular and pustular nature were distributed over the hands, arms, face and neck. The iodoform had been applied to a crushed finger.

DR. MORROW said he had seen eruptions of a distinctly bullous character from the topical use of iodoform. In eruption upon the face from the application of iodoform to the finger, in a case of his own, he had thought the lesions due to local transfer rather than to systemic effect.

DR. ALLEN said that on the preceding day, in discussing Dr. White's paper on dermatitis venenata, he had referred to a number of instances which had fallen under his observation, of dermatitis due to the application of iodoform to injuries about the fingers, and had come to believe there was some connection between such crushed wounds and iodoform poisoning. He had during the past winter observed a case in which lesions at a distance had resembled those of Dr. Fordyce's case. He thought there was absorption and systemic effect.

DR. FORDYCE said that his patient being a subject of tuberculosis probably accounted for the severity of the eruption. He had presented at the New York Dermatological Society a case in which twice after the application of iodoform to a crushed finger a bullous eruption had appeared on the face, arms, scrotum and legs.

#### IMPETIGO CONTAGIOSA UNIVERSALIS.

DR. C. W. ALLEN, of New York, read the next paper, with the above title, presenting photographs of the case described. The bullous form of impetigo extending over the greater portion of the body is not of sufficiently frequent occurrence to necessitate an apology for presenting a brief history of an instance. Such cases have, undoubtedly, at times been mistaken for and described as pemphigus. The terms "epidermis pemphigus" and in tropical countries more especially, "pemphigus contagiosus" have been applied.

Mary E., five years of age, was referred to the writer by Dr. O'Neil. She had been vaccinated by a board of health physician four months before she came under the writer's observance. Before the vaccination had healed "white blisters," as they were described, formed around the vaccination site and gradually spread to neighboring parts. When first observed the whole anterior surface of the body, excepting the hands and feet, especially the palms and soles, were implicated in a versiculo-bullous eruption with pigment marks and crusts upon infiltrated areas. The bullæ had clear contents, and either ruptured early or became flaccid. After rupture the centre of the bullous area was red and tender. Spreading occurred at the margin, the epidermis being raised up; and smaller lesions would form in the neighborhood. There were marked glandular swellings. The treatment which finally succeeded, after a long and tedious

course, was a solution of ichthyol in collodion, forming an occlusive dressing. The extremities did well, too, when wrapped in bichloride dressings so as to prevent scratching.

The features of the case were (1) its resemblance to pemphigus and uniformity of initial lesion, (2) the persistence in the lesions occurring in crops, (3) the spread of the larger bullæ by undermining the surrounding epidermis. There was almost entire freedom of the posterior aspect of the trunk throughout the course of the disease. As favoring the diagnosis of impetigo as against pemphigus was the benignity of the affection and the slight constitutional disturbance produced. Acute febrile pemphigus has an entirely distinct train of symptoms; and chronic pemphigus, while it may at times be recovered from, must be placed under the most severe and fatal of the skin affections.

DR. DYER spoke of a number of cases similar to that reported by Dr. Allen which he had seen in New Orleans after an epidemic of small-pox and extensive vaccination. He had regarded one case identical with that shown in the photographs, as an instance of dermatitis herpetiformis with bullous lesions which became hemorrhagic. The urine here, as in three other cases, contained a large percentage of albumin. The case was under observation for a period of two years, during which time there were a number of recurrences.

DR. WHITE said that widely distributed staphylococcus disease presented features quite different from those described in the paper, and hence it was unfortunate that in the case reported there had been no examination made to establish the presence of the staphylococcus.

DR. DUHRING said the point had not been brought out whether there was any true herpetiform element, nor had any proof of contagion or the existence of micro-organisms been established. Without a detailed knowledge of the case, he would have been inclined from the photographs to make the diagnosis between pemphigus and dermatitis herpetiformis. The latter is milder in children, with special tendency to formation of blebs. He was strongly inclined to exclude impetigo contagiosa.

DR. ALLEN, in closing, said it was his belief that bullous forms of impetigo existed. The fact of vaccination being the immediate etiological factor was so in accord with what we know of the beginning of impetigo that it became an important point in the diagnosis. Another point was that the lesions about the face and chin were distinctly those of impetigo contagiosa in which we do not require a history of contagion to establish the diagnosis. There was nothing of an herpetiform distribution or grouping, unless we regard the creeping extension beneath the epidermis in the case of the larger bullæ as "herpetic." If we admit the possibility of saprophytic cocci being introduced from the surface by unclean vaccination, it was to his mind equivalent to contagion from a second person. The clinical features of some lesions made it probable that staphylococci were present.

He asked Dr. Duhring if he regarded vaccination as an important etiological factor in dermatitis herpetiformis.

DR. DUHRING replied in the negative.

DR. BRANDT, of Hot Springs, presented a most remarkable case of

#### CONGENITAL HAIRY NÆVUS LIPOMATODES,

extending from above the iliac crests almost to the knees in a young man whose face and general surface were studded with small hairy moles.

One session was given up to the presentation of patients (Drs. Brandt and Pole); photographic illustrations (Drs. Robinson, Fordyce, Morrow, Hardaway); instruments (Dr. Allen), microscopic specimens and photo-micrographs.

Dr. J. C. White, of Boston, was elected President; Dr. L. A. Duhring, of Philadelphia, Vice-President; and Dr. J. T. Bowen, of Boston, Secretary and Treasurer.

A vote of thanks was passed to the retiring president, and the meeting adjourned.

### Recent Literature.

*Annual Report of the Central Sanitary Bureau attached to the Home Department of the Imperial Japanese Government.* For the twenty-fifth year of Meiji (1892). Tōkyō. 1895.

This report of the Health Board of Japan contains much that is interesting from a medical point of view, and shows the extent to which this Oriental nation is keeping pace with the progress of the Western countries of Europe in its estimate of the value of public sanitary administration.

The first chapter deals with the vital statistics of the country. In a population of about 41 millions the marriage-rate was 8.48 per 1,000 of the population (16.96 persons married); the birth-rate was 29.25, and the death-rate 21.76.

There was a slight increase of the birth-rate during the ten years ending with 1892 — from 26.7 per 1,000 in the first five years to 28.7 in the last five years of the decade.

The illegitimate births were six per cent. of the total births. The following table from the second chapter shows the number of cases of the principal infectious diseases reported and the deaths from the same:

	Cases.	Deaths.	Fatality.
Cholera,	874	497	56.6%
Typhoid Fever,	35,636	8,529	23.9
Dysentery,	70,842	16,843	23.8
Diphtheria,	4,359	2,531	58.1
Typhus Fever,	281	62	22.1
Small-pox,	33,779	8,409	24.9

The number of cases of cholera in this table indicate a very moderate prevalence as compared with 1890, when there were 46,019 cases and 35,227 deaths. The deaths from typhoid fever indicate a death-rate of about two per 10,000 of the population, or less than half the average rate in Massachusetts for the past twenty years. Dysentery was unusually prevalent and fatal. The deaths from diphtheria were very few when compared with the population, but the fatality (58.1 per cent.) was very great.

The unusual prevalence of small-pox led to greater stringency in the enforcement of vaccination, and nearly four million vaccinations were made during the year. These included primary vaccinations, and vaccinations a second and a third time. Of the primary vaccinations 83.4 per cent. were successful; of the

first re-vaccinations 88.2 per cent.; and of the second re-vaccinations 28.8 per cent. The whole number of vaccinations performed in Japan in the five years ending with 1892 was over twelve and a quarter millions.

A rigid examination of prostitutes for syphilis is conducted throughout the country—the whole number examined in 1892 having been 1,431,199, of which number 51,601 were found to have syphilis.

The number of physicians licensed to practise during the year was 879, making with those already previously licensed 40,093 in all.

The number of licensed midwives had increased from 274 in 1886 to 1,398 in 1892.

There were also 2,836 pharmacutists, 13,225 druggists, and 1,375 manufacturers of medicine licensed; but just what constitutes the difference between pharmacutists and druggists does not appear. If we are to judge from the results of the examinations for practice of medicine and dentistry, it would seem that either the examination must have been extremely rigorous, or the candidates were unusually delinquent; since, at the primary examination only 256 out of 2,354 candidates passed a successful examination, and, at the final examination, only 156 out of 1,399 were successful, while in dentistry 11 only out of 117 succeeded in passing.

In the government laboratories, considerable work was done in the analysis of drugs, water and foods.

A limited number of experiments were also made with the bacilli of cholera and of tuberculosis.

*A Manual of Obstetrics.* By W. A. NEWMAN DORLAND, A.M., M.D., Associate Demonstrator of Obstetrics, University of Pennsylvania; Instructor in Gynecology in the Philadelphia Polyclinic, etc. With 163 illustrations in the text and 6 full-page plates. 760 pp. Philadelphia: W. B. Saunders. 1896.

This an excellent manual of obstetrics, concise and well arranged. A convenient system of paragraphing, italicizing and numbering has been followed, rendering the book an easy one for reference. The efficiency of the book is also increased by a complete index, with numerous cross-references.

The illustrations are all good and to the point, many of them having appeared in the large American text-book. We are surprised to find the old nomenclature of R. O. P., L. D. A., etc., instead of O. D. P., Se. L. A., etc. With the exception of minor points like this there is little to criticize and much to praise. The chapter on puerperal sepsis is particularly interesting, giving as it does the results of recent pathological and bacteriological research.

There are a number of diagnostic tables in the book which are of great value. In a word, it is a valuable and convenient manual for student and practitioner.

*How to Feed Children.* A Manual for Mothers, Nurses and Physicians. By LOUISE E. HOGAN. Philadelphia: J. B. Lippincott Co. 1896.

This is one of the best little books of its kind which has yet appeared. It is full of good practical advice founded on scientific principles, and while presenting the very latest advances which have been made in the subject of feeding, it in no way encroaches on the province of the physician.

The first chapter is devoted to giving the reasons why mothers should study dietetics, and is one which it would be well for all mothers to read, as a knowledge of this most important part of their children's lives is in case of most mothers exceedingly limited.

The subject of infant feeding is carefully and thoroughly discussed, and a number of chapters are devoted to the various foods which should be given in later childhood.

Excellent chapters are also given on the proper diet for the summer months and for school-children, and most valuable directions for the outfits needed and the precautions to be taken in travelling.

The last chapter in the book contains a number of recipes for the preparation of various articles of diet.

Mrs. Hogan is to be congratulated on having given us so many practical suggestions in so compact a form.

*A Treatise on the Medical and Surgical Diseases of Infancy and Childhood.* By J. LEWIS SMITH, M.D., Clinical Professor of Diseases of Children, Bellevue Hospital Medical College; Physician to Charity Hospital; Physician to the New York Foundling Asylum; Physician to the New York Infant Asylum, etc. Eighth edition, thoroughly revised and greatly enlarged. With 273 illustrations and four plates. New York and Philadelphia: Lea Brothers & Co. 1896.

Dr. J. Lewis Smith's treatise on the diseases of children has been so long before the medical profession and has been so favorably received by it, that the eighth edition needs no especial introduction. While in previous editions we find by the title-page that the work is on the diseases of infancy and childhood, Dr. Smith has in his eighth edition entitled the book "The Medical and Surgical Diseases of Infancy and Childhood." The surgical portion of the work has been written by Prof. Stephen Smith. A number of additional chapters have been incorporated in the work, and this has necessitated an increase of about one hundred pages over the last edition.

While the book is in the same general style as the previous editions which have so often been reviewed, yet in parts it has been practically rewritten, and a number of new illustrations appear in the text.

The article on rachitis has in this way been much enlarged. The author is to be congratulated that after so many years of existence a new edition of his book has been called for.

*History of the Cholera Controversy, with Directions for the Treatment of the Disease.* By SIR GEORGE JOHNSON, M.D., London, F.R.C.P., F.R.S., etc. London: J. & A. Churchill. 1896.

The late Sir George Johnson gives in this octavo of 78 pages a brief history of the controversies relating to the pathology and treatment of cholera, and especially of his own part therein, which was an active one, since the epidemic of 1854. At that time he began to advocate and practise the eliminative treatment by castor oil, instead of the repressive treatment by opium and brandy. His theory was that choleraic collapse is the result of extreme constriction of the pulmonary arterioles.

The new theories of one generation are often the old ones of the next, and the questions concerning cholera which agitated Sir George Johnson and his contemporaries have been in a large measure superseded by the cholera bacillus.

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THE DECENNIAL REPORT OF THE ENGLISH REGISTRAR-GENERAL. PART I.<sup>1</sup>

"THE annual reports of the vital statistics of different countries," in the words of Dr. Longstaff, "form a vast reservoir into which a ceaseless stream of facts has been flowing for many years."

This first part of the Registrar-General's decennial volume contains much valuable material especially in the introductory observations, all of which relates to mortality for the ten years (1881-90). It is understood that the second volume will contain a full statement in regard to the mortality of occupations. The compiler acknowledges the indebtedness of the government to the medical profession, whose generous co-operation has enabled the registrar to make the report extremely valuable, since the accuracy of this department of vital statistics is due to the care with which individual certificates of death are made.

"Influenced by these considerations," says Dr. Tatham, "I have striven to develop to the utmost the practical value of these volumes as a work of reference for students of Preventive Medicine; for I feel assured that to have succeeded in this endeavor would constitute the highest tribute I could offer to the memory of Dr. William Farr, whose life-long labors in behalf of that science, which must ever be identified with his name, still continue to influence beneficially the health conditions of his fellow-men."

In this volume great pains have been taken to present in its nearly nine hundred pages the essential facts relating to the mortality of the population of each one of the counties and the 631 registration districts of England and Wales. Each page presents a district, and all the important facts are presented in a condensed form. For the sake of brevity and of practical usefulness, certain causes of death are selected which are briefly as follows: The deaths and

death-rates from each one of the principal infectious diseases, from cancer and the tubercular diseases, from each of six groups of local diseases, from puerperal fever, childbirth and violence. There are also presented the marriage-rate, the birth-rate, the crude death-rate of each sex, the standard death-rate, the deaths in each of the years of life under five, and at each of ten succeeding age-periods.

In the preliminary observations, condensed tables are given which are extremely valuable. The first series relates to the changes in the death-rate which have taken place in England. These are presented for all ages and for each of eleven age periods. The deaths for the five successive decennial periods from 1841 to 1890 were as follows: 22.28, 22.17, 22.42, 21.27 and 19.08 per 1,000 of the population. There was also found to be a decided decrease at nearly every age-period, comparing the last two decennials; but the greatest decrease in the death-rate was among persons under twenty-five years of age.

The report goes on to say: "There is no doubt that a considerable proportion of the diminution in the death-rate since 1870 is the direct result of what is implied by the term 'improved sanitation'; but that the whole difference between the rates of the two most recent decennia cannot thus be accounted for will be obvious on reflection." He then shows that a diminution in the birth-rate during the same time has seriously affected the age-constitution of the population, and even if sanitary conditions were to remain unchanged, the effect of this variation in the age-constitution of the people, would be to *reduce* the mortality at all ages (not at each age); and that this has actually been the case is easily shown.

The report will be interesting to life insurance Medical Examiners on account of the new English life table which is presented, and based upon the figures of the decennial period (1881-90). For the sake of brevity, and to show the changes which have taken place since the publication of Dr. Farr's table of the period 1838-54, we present the expectation of life of males only at three periods, and at the ages 0, 10, 20, etc.

EXPECTATION OF LIFE IN ENGLAND. MALE.

Age.	1838-54	1871-80	1881-90
At birth . . . . .	39.91	41.35	43.66
Ten . . . . .	47.05	47.00	49.00
Twenty . . . . .	39.48	39.40	40.27
Thirty . . . . .	32.76	32.10	32.52
Forty . . . . .	26.06	25.30	25.42
Fifty . . . . .	19.54	18.93	18.82
Sixty . . . . .	13.53	13.14	12.88
Seventy . . . . .	8.45	8.27	8.04
Eighty . . . . .	4.93	4.79	4.53
Ninety . . . . .	2.84	2.66	2.37
One hundred . . . .	1.68	1.61	1.24

By this table it appears that boys at birth had an expectation of life of 39.9 years in the period 1838-54, and this had increased to 41.3 in 1871-80, and still further to 43.6 in 1881-90.

The new life table for males shows improved expectations of life, when compared with the earlier tables up to twenty-six years of age; from the ages twenty-

<sup>1</sup> Supplement to the Fifty-Fifth Annual Report of the Registrar-General of Births, Deaths and Marriages in England. Part I, pp. cxvii, 769. London. 1896.



seven to forty-four the expectations are lower than those in the first table, but higher than those of the 1871-80 table; for ages forty-five and upward the expectations of life are lower by the new table than by either of the others.

In the table for females the improvement in the new table over each of the previous tables continues up to forty-four years of age. At all ages beyond forty-five the expectation of life is less by the new table than in either of the preceding.

Pursuing this subject more minutely the registering officer presents a table, in which he has made a careful analysis of the mortality of the two decades preceding 1890, during which very marked changes have taken place. The table shows the balance of gain or loss in the mortality from specified causes. It appears that the deaths from infectious diseases and tuberculosis generally had diminished, except those from measles and diphtheria, while those from cancer, and those of the circulatory and urinary systems had increased. This result differs considerably from a similar table showing the mortality in Massachusetts in the same period; since in Massachusetts the deaths from each of the groups of local diseases have materially increased, especially those of the respiratory, circulatory and nervous systems, in the order named.

In the comments on special diseases, it appears that the death-rate from phthisis has not only diminished, but a marked change has taken place in the sex incidence from this disease; since in the early period 1851-60, the rate for females was greater than that of men, but in 1881-90 that of men was much the greater. The figures for later years show that this progressive change has continued without interruption.

The following condensed table shows the change by decennial periods:

SEX INCIDENCE OF PHTHISIS IN ENGLAND.  
Showing Female death-rate from phthisis, the Male death-rate being taken as 1,000.

1851-60 . . . . .	1,076
1861-70 . . . . .	1,006
1871-80 . . . . .	918
1881-90 . . . . .	871

During the 20 years 1871-90 the mortality-rate for typhoid fever had fallen off as follows: The rate for each successive five-year period was 374, 277, 216 and 179 per million living.

With reference to the increase in the mortality from cancer in England (384 deaths per million in 1861-70, 468 in 1871-80 and 589 in 1881-90) the report says: "the experience of the past ten years lends support to the contention advanced in the last decennial supplement, namely, that, the increase is not wholly real, but may be accounted for, to some extent, on the assumption that the true nature of obscure cases of malignant disease has been recognized with ever-increasing certainty in recent years, and that, as a consequence, the statement of death causes by medical men has been made with greater precision than had formerly been the case."

Other new and important topics treated in this

valuable report are the changes in classification made at the general registry office, faulty certification of causes of deaths, and density of population in relation to mortality.

The changes in classification are 23 in number. Under the head of faulty certification it appears that over 22,000 letters of inquiry for particulars were sent out from the general registry office during the decennium (1881-90) for the purpose of obtaining information relative to faulty and ambiguous returns. This practice is pursued in Maine and in Minnesota and should be adopted in all States where registration exists.

## MEDICAL NOTES.

**MEDICAL CONTRACTING IN SANTA CLARA COUNTY, CAL.**—The Physicians of Santa Clara County, Cal., have adopted resolutions condemnatory of the practice of contracting, and pledge themselves not to indulge in it.

**A CLINIC FOR DEFECTIVE SPEECH.**—The Polyclinic Hospital in Philadelphia has established a department for the cure of speech defects which do not require surgical or special medicinal treatment. The department will take cases that need training in vocalization and articulation.

**EGYPT FREE OF CHOLERA.**—Consul-General Frederick C. Penfield, at Cairo, Egypt, under date of November 8th, informed the Marine-Hospital Service through the State Department that Egypt had been officially declared free of cholera. Not a case had been reported in the ten days prior to the date on which he wrote.

**THE JOURNAL OF NERVOUS AND MENTAL DISEASE.**—The management of the *Journal of Nervous and Mental Disease* announces the following arrangement of the staff for 1897: Editors, Drs. Chas. L. Dana, F. X. Dercum, Philip Coombs Knapp, Chas. K. Mills, Jas. J. Putnam, B. Sachs, M. Allen Starr; Associate Editors, Drs. Philip Meierowitz, Wm. G. Spiller; Managing Editor, Dr. Chas. Henry Brown, 25 West 45th Street, New York.

**THE PLAGUE IN INDIA.**—It is reported that the plague had appeared in Bombay and Ahmedabad, India, and at latest accounts was spreading. At Calcutta vigorous precautionary measures are being taken. Two hospitals have been built in an isolated spot and an ambulance corps has been arranged for. Sixty thousand people are said to have fled from Bombay, on learning of eight deaths and seventeen new cases in the northern part of the city, where there is no drainage. The health officers find great difficulty in getting laborers for cleaning and disinfecting, owing to the fear of contagion.

**RÖNTGEN RAYS AND THE POPULAR IMAGINATION.**—A correspondent of the *Lancet* gave a Röntgen-ray exhibition at a popular bazaar, and curious were the popular ideas which he elicited regarding the use

of skiagraphy in surgery and medicine. The following are examples of the popular ideas regarding the subject: An elderly gentleman of prosperous appearance objected that the show was not "up to date" as he had "read somewhere in a newspaper that now you can see the liver palpitating and the heart circulating." A young and anxious mother asked to see if her little boy had really swallowed a threepenny-bit, as he was uncertain himself. She had read in the papers that a great doctor, Sir Something Blister, in a speech in a large meeting in Liverpool, a little while ago, said that a halfpenny had been seen in a boy's "sarco-phagus!" A girl of the domestic-servant class asked the curator in confidence to "look through her young man unbeknown to him, while he looked at the picture, to see if he was quite healthy in his internals."

## BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—For the two weeks ending at noon, Nov. 25, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 286, scarlet fever 81, measles 114, typhoid fever 45. For the week ending December 2d, there were reported: diphtheria 130, scarlet fever 45, measles 49, typhoid fever 63.

**DEATH OF A CENTENARIAN.**—Mrs. Sarah Annis, widow of Samuel E. Annis, died at Worcester, November 29th, aged 101. She was born in northern New York.

**A QUICK DIAGNOSIS.**—At a surgical clinic a few days ago, before a class in the Harvard Medical School, a patient was shown who had a wound on the thigh caused by the bite of a rat. The instructor having asked the class for a diagnosis of the case, one of the students replied promptly, "Rodent Ulcer."

## NEW YORK.

**A WISE ORDINANCE.**—The Board of Aldermen has passed an ordinance forbidding the carrying of young children under five years of age on bicycles.

**REQUESTS TO HOSPITALS.**—By the will of Mrs. Antoinette Mayer, the Mount Sinai Hospital and the Montefiore Home for Chronic Invalids each receive \$35,000, and by the will of Mrs. Charlotte Skidmore, the Presbyterian Hospital, \$5,000.

**POLYSYLLABIC CHEMICAL NOMENCLATURE.**—At the annual meeting of the National Academy of Sciences, which was held last week at the Columbia School of Mines, Prof. Ira Remsen, of Johns Hopkins University, read a paper on "The Isomeric Chlorides of Paranitrothosulphobenzoic Acid," in which he apologized for this formidable name and explained that he was not personally responsible for it.

**DEATH OF DR. FIELD.**—Dr. Jacob F. Field, one of the most prominent physicians in Hudson County, New Jersey, died at his residence in Bayonne on November 25th, at the age of fifty-seven. During the late war he served in the medical department of

the United States Navy, and afterwards settled at Bayonne. In conjunction with the late Dr. Frederick G. Payn he founded the Bayonne City Hospital.

**DEATH OF DR. SASS.**—Dr. Louis J. Sass died on November 19th, at the age of 76 years. He was a native of Havana, and was graduated from the New York Medical College in 1858. He was one of the pioneers in the modern treatment of diseases of the nose and throat, a specialty in which he won considerable distinction. He had a great deal of mechanical ingenuity, and was, perhaps, the first to make use of compressed air for the application of medicated sprays to the larynx and nasal passages.

**THE DIRECTORY OF COLUMBIA UNIVERSITY.**—The Directory of Columbia University, just published by the secretary, shows that among the officers of the institution are the following: professors, 59; adjunct professors, 15; clinical professors and lecturers, 14; clinical assistants, 65. The students primarily registered under the Faculty of Medicine are classified as follows:

First-year class . . . . .	276
Second-year class . . . . .	157
Third-year class . . . . .	153
Specials . . . . .	19
Unclassified . . . . .	16
Total . . . . .	620

**THE NEW PAVILION AT ROOSEVELT HOSPITAL.**—On November 18th, the trustees of the Roosevelt Hospital gave a reception for the inspection of the handsome new pavilion for private patients, which has been erected west of the main building of the institution. It is designed for the treatment of surgical, gynecological and medical cases under the most approved conditions, and care has been taken to fit up the rooms in such a manner as to render them home-like, cheerful and attractive. The first two floors of the pavilion are arranged to accommodate patients in single rooms or *en suite*, and the third and fourth floors have been set apart and furnished as a home for nurses, thus providing accommodations for the training-school just opened.

**THE NEW GYMNASIUM OF COLUMBIA UNIVERSITY.**—Columbia University is to have the largest and one of the finest gymnasiums in the country. It is to be included in what will be known as the University Building, which will stand near the centre of the new grounds on Morningside Heights. This structure, which is to be three stories in height, will be 260 feet long and 180 feet wide. In the basement there will be a magnificent swimming pool, said to be the largest of its kind in the world, and around it will be arranged all kinds of baths. On the main floor will be the gymnasium proper, with rooms on either side for boxing, fencing, and other exercises, and with a running track extending all around it. The latter will be one-ninth of a mile long and twelve feet in width. The estimated cost of the building, which will also contain halls for literary societies, is \$500,000.

**DEATH OF GUSTAVUS A. SABINE.** — Dr. Gustavus A. Sabine died at his residence in New York, on November 19th, in the eighty-eighth year of his age. Dr. Sabine, who received his professional degrees from the Royal College of Surgeons, London, in 1832, and the Medical Society of the County of New York in 1836, was for many years one of the best known and successful practitioners in the city, and in the generation that has now almost entirely passed away, was one of the most prominent figures in the New York medical world. Of tall stature and a dignified and commanding presence, he bore a striking personal resemblance to the late Fernando Wood, for several terms Mayor of New York. Up to the time of his death he was one of the consulting physicians to the Woman's Hospital and the New York Infirmary. One of his sons, now deceased, Dr. Thomas T. Sabine, was Professor of Anatomy in the College of Physicians and Surgeons, and a distinguished surgeon.

**THE NEW YORK ACADEMY OF MEDICINE.** — On Thursday evening, November 19th, the anniversary discourse before the New York Academy of Medicine, was delivered by Dr. George R. Fowler, Commissioner of the Board of Health, who took for his subject, "The Evolution of the Surgery of the Twentieth Century." On this occasion, the President, Dr. Bryant, announced that the fiftieth anniversary of the foundation of the Academy would be celebrated with fitting ceremonies early in January. The exercises will be held in Carnegie Hall, and President Cleveland has promised to be present and make an address. Afterwards a reception will be held in the Academy building. On November 20th there was a special meeting of the Academy, under the auspices of the Section on Obstetrics. Dr. J. Clifton Edgar read a paper on "The Treatment of Eclampsia," and among the invited guests taking part in the discussion, were Drs. Reynolds and Green, of Boston, Davis and Hirsch, of Philadelphia, and Jewett, of Brooklyn.

**OVERCROWDING AT KINGS COUNTY HOSPITAL.** — For years the Kings County Hospital, the public hospital of Brooklyn, has been disgracefully inadequate for the demands of such an institution, and several grand juries have investigated its condition and made it a subject of condemnation in presentments. Drs. Winfield, Madden and McNaughton, of the attending staff of the hospital, have now made a special report to the Commissioners of Charities in regard to the matter. In it they state that 700 patients are crowded into wards intended to accommodate 400, and that there are no separate quarters for the nurses, who are obliged to sleep in the same rooms with the patients. There are only eight physicians and surgeons allowed the hospital to care for the 700 patients in the hospital proper, in addition to 60 in the nursery, and 60 in the wards for feeble-minded persons, as well as all those who apply for treatment in the out-door department, amounting to about 5,000 in the course of the year. Moreover, the operating-room is totally inadequate for the existing requirements, and this has resulted in a

large number of unsuccessful operations. What the physicians especially ask for is, new and suitable quarters for operating, a separate pavilion for convalescents, and a separate pavilion for consumptives, who are crowded into the wards with the other sick, thereby greatly increasing the danger of infection.

**A LOW MORTALITY-RATE.** — The mortality in the city continues to be exceptionally small. In the week ending November 21st the number of deaths, 566, was the smallest recorded since the first week in December, 1889, or seven years ago, when just the same number was reported. No lower number of deaths has been recorded since the first week in November, when the number was 565. When the increase in population is taken into consideration, this death-rate is found to be smaller than has been met with for many years. During the week ending November 28th the deaths increased to 602, but this was 25 less than in the week ending November 14th, when the mortality was smaller than for quite a long time previously. While there has been a slight increase in the number of deaths from scarlet fever and measles, the mortality from pneumonia and consumption, which, except in the summer months, are by far the most fatal of all diseases in New York, remains comparatively small. During the week ending November 28th one death from influenza was reported; the first for many months.

### Miscellany.

#### CAN CIVIC LEGISLATION ENSURE PURE MILK?

MINNEAPOLIS is one of the few American cities the health authorities of which have undertaken, by means of licenses conditioned upon the use of the tuberculin test, to prevent the sale to citizens of milk taken from tuberculous cows kept on dairy-farms in neighboring towns. This license system has been in force for more than a year. The validity of the ordinance which forbids the sale of milk from unlicensed herds is now attacked in the courts by a dairyman who was fined in a Minneapolis court for having sold milk without the required license, and who appealed to the Supreme Court of the State. He complains that no provision is made for paying to the dairymen any part of the value of cows which have been condemned, and contends that the municipal authorities should not be permitted to require that dairymen living outside of the city shall obey their sanitary laws. The case is one of considerable importance because preparation has been made in some other cities for the adoption of the license system used in Minneapolis.

The above clipping from the *New York Times* is of interest in showing the manner in which would-be vendors of tuberculous milk attempt to interfere with just sanitary legislation. With regard to the injustice of municipal authorities requiring that dairymen living outside the city should obey their sanitary laws, we would suggest that the Minneapolis authorities would not object to the dairymen's disobeying all the sanitary or other laws they might wish to when they are in the towns in which they live; but when they ply a trade dangerous to the lives of the citizens of

Minneapolis within the limits of that city, it would appear to a layman as if they came within the jurisdiction of the courts of that city.

## Obituary.

HENRY G. DAVIS, M.D.

HENRY GASSET DAVIS, M.D., died recently at his home in Everett, Mass., at the age of eighty-nine years. He was born in Trenton, Me., November 4, 1807. His grandfather was Deacon Isaac Davis, of Northboro, Mass., a descendant of Dolor Davis, one of the first settlers on the Cape. His early education was obtained in the common schools.

In 1835 he visited a sister under treatment for lateral curvature of the spine; and on inquiring about the treatment, it seemed to him unphilosophical and ill adapted for the desired end. He ascertained that this was the best treatment known to the profession. This decided him to begin the study of medicine, and to devote himself to this department of surgery.

In the winter of 1835-36 he attended lectures at New Haven, and was under the instruction of the professor of surgery. The next spring he went to Bellevue Hospital. He graduated from the Yale Medical School in March, 1839, practised in Worcester a short time, and then went to Millbury, where he treated a large number of patients from the surrounding towns. In 1855 he left Massachusetts for New York City. Here he treated patients from all parts of the United States and from abroad, and also wrote a book on diseases of the thigh and hip.

He was the inventor of several ingenious appliances. He was a man of ideas rather than of scholastic attainments, and as such disregarded erroneous traditions of the past and opened a way to the great advance made in America, especially in the study and treatment of hip disease.

He leaves three children, a son and two daughters.

## Correspondence.

### MORPHOLOGY OF THE CEREBRAL CONVOLUTIONS, WITH SPECIAL REFERENCE TO THE ORDER OF PRIMATES.

JAMAICA PLAIN, November 21, 1896.

MR. EDITOR: In 1890 a paper was submitted to the Boylston Prize Committee which appeared to all the members easily worthy of the prize, and to several of them with whom the writer has conversed, as well as to experts to whom it was submitted, a most valuable contribution to science, from the care and originality with which the abundant material had been utilized.

It was found to have been written by Dr. A. J. Parker of Philadelphia.

The ill health and subsequent death of the author delayed its publication, which has, however, recently been accomplished in the *Journal of the Academy of Natural Sciences*, under the supervision of his friend, Dr. F. X. Dercum. It is entitled "Morphology of the Cerebral Convolution, with Special Reference to the Order of Primates."

There is nothing which shows more clearly than the history of our knowledge of the topography of the cerebral cortex that the progress of science is not due solely to improved means of observation, as is, of course, true, for instance, of all microscopic anatomy, but also to more logical, comprehensive and systematic methods of thinking. Material for exactly such observations as are made in this essay has been freely accessible for centuries, and required no further means of observation than a pair of ordinary eyes; yet even so recent a writer as Ecker speaks of the artists who drew the convolutions of the brain as they

might do any dishful of macaroni as not in the far distant past. In fact, we might say that almost the whole of this science is a growth, not only of the present century, but of the last three-quarters thereof.

The mapping out of the surface of the human brain in an arbitrary way, so that any given convolution may be accurately described and located, may be regarded as now practically accomplished. This kind of description, however, has never seemed satisfactory to many students, and numerous attempts have been made to make this art of cerebral morphology more coherent and systematic by theories of the methods by which the infolding of the cortex takes place. Dr. Parker's essay is the most recent, and perhaps the most successful of these. It discusses minutely the convolutions in the brain of several races—white, negro and Chinese—in the human fetus and in many species of monkeys and other lower animals, a large number of the figures being original. These, of course, cannot even be indicated in a notice of this length; but some of the general conclusions may be quoted, as showing the character of the work.

"4. The occipital lobe as a whole is formed by a regular scroll-like infolding around the fissure of the posterior horn of the lateral ventricle, the calcarine.

"From this single, symmetrically-developed occipital lobe eight convolutions separated by six fissures pass forward to the two anterior extremities of the divided cerebral hemisphere. These are split by the Sylvian fissure into two groups, equal in the number of fissures and convolutions composing them, and similarly related, an occipito-frontal and an occipito-temporal lobe.

"Of these two lobes the occipito-temporal always retains its primitive simplicity; but the occipito-frontal group, owing to its greater antero-posterior extension, is exposed to pressure forces that tend to produce a vertical fissuration, as a result of which we have the production of the fissura centralis with its vegetative repetitions, the post-central and precentral fissures in the parietal region, whilst anteriorly the type remains unchanged.

"In the primates each hemisphere, with respect to its convolutions, is a symmetrical bud, arranged around the point of entrance, the cerebral crus; its posterior portion involuted in a regular and symmetrical manner around the fissure of the posterior horn of the lateral ventricle (fissura calcarina), whilst the anterior portion is split by the fissure of Sylvius into two symmetrical halves, consisting of the same number of fissures and convolutions in each division. Of these the occipito-frontal division or lobe is related to the upper branch of the fundamental mesial arched fissure (fissura callosalis), and the occipito-temporal in a corresponding manner to the inferior branch (fissura hippocampi).

"Viewed in this way, the arrangement of the convolutions in man and the Simiadae becomes so clear, that at a glance one can see, recognize and remember the entire cerebral conformation of any individual brain that may be under examination, and any special peculiarities that may exist at once become marked and prominent. Without the aid of this morphic conception the cerebral surface presents a confused mass of isolated convolutions, lobules, fissures, sulci and sulculi, which it is impossible to put together as a whole. . . .

"Like other organic buds, the cerebral hemispheres develop symmetrically, and the type of fissuration is due to the resultant forces produced by the interaction of the growth forces of the hemisphere combined with the pressure forces of the less rapidly expanding but symmetrically developing cavity of the skull. . . .

"The question as to which of these two series of forces is most potent in its differential action in producing fissuration it is hard to answer; but it would appear that in the earlier, and even to the quite late, stages of development it is the brain which modifies the shape and structure of the skull rather than the reverse, and that finally, as the skull grows more and more rigid, its influence is shown by the increasing tortuosities and pushing out of place of previously existing parts."

It may be noted with some satisfaction that the views and arrangement of Dr. Parker interfere but little with the nomenclatures at present in use.

The essay closes with an ingenious application of the laws of the formation of partitions formed by spherical liquid films such as are formed by the meeting of two or more soap-bubbles, the expanding liquid films representing the expanding cerebral substance as it aggregates around certain centres of growth.

This notice is written, not as an appreciative review, but to call the attention of the anatomist and neurologist to a work that as yet has received but little recognition, that is, within the notice of the present writer. R. T. E.

# THE PREVENTION OF THE SPREAD OF DIPHTHERIA BY MEANS OF THE BACTERIAL TEST.

Boston, November 28, 1896.

MR. EDITOR: Diphtheria is so prevalent at this season that I desire again to call attention through your columns to the value of the bacterial test in preventing the spread of this disease. It is of special importance in two stages, namely, very early in the course of the disease and at its close, that is, during convalescence. When a case of diphtheria occurs in any group of persons, a household or school-room, for instance, the bacterial test should be applied to both the nose and throat of all the members of the given group. This test will in a large proportion of "groups" reveal an otherwise unsuspected case or cases of diphtheria.

The following example will illustrate the importance of the measure which I have advocated both when writing and speaking of this disease.

A case of diphtheria appeared in a family consisting of six persons. I applied the bacterial test to all the members of the household, and found two more cases of diphtheria, of which, without the warning thus given, there would have been at first no suspicion as a result of the examination of the throats, or other bodily conditions, the patients appearing perfectly well.

Another illustration will make the advantages of this test still more obvious. A child, A. B., was taken ill with diphtheria, and his younger brother and nurse were sent, for fear of contagion, to the house of a relative in another town. Soon after its removal the younger child complained of his throat. I was called in in consultation; and although there was no membrane to be seen, and this did not appear until the following day, I found the bacilli directly in a cover-glass preparation made at the bedside, and the cultures showed them likewise on the following day. I also had cultures made from the throat of the child's nurse, although it showed no indication of diphtheria, and found bacilli there also. If the bacterial test had been applied before they left home, the bacilli would probably have been found then in the throats of both the younger child and nurse. They could have been treated immediately, which is of great importance, and the risk of carrying the disease into another household would have been prevented.

The following case demonstrates the importance of the bacterial test during convalescence. The throat of this patient, D. C., was perfectly clear within a week after the injection of the antitoxin, but the bacilli lingered, as this record of cultures made in the Harvard Medical School shows:

April 25, positive.	June 13, positive.	July 21, positive.
28, "	16, negative.	25, "
30, "	18, positive.	28, "
May 5, "	19, negative.	Aug. 4, "
10, "	20, positive.	11, "
12, "	21, "	19, "
17, "	23, "	25, "
23, "	25, "	Sept. 1, "
26, "	26, "	9, "
30, "	28, "	15, "
June 2, "	30, "	22, "
5, negative.	July 2, "	29, "
7, positive.	7, "	Oct. 5, negative.
9, negative.	9, "	6, "
11, positive.	14, "	

The patient was able to be about within a short time, and yet was dangerous to others; in October cultures made from her throat were sufficiently virulent to kill a guinea-pig in thirty-six hours.

The record also shows the necessity of having more than one negative culture before the patient is released from quarantine.

The laity do not realize that diphtheria is not usually transferred from one person to another except by actual contact through the hands or mouth, or by infected clothing, utensils, etc. The bacillus is not a motile one, and this disease is essentially one, the germs of which are put into the mouth or nose by the hands. The slight annoyance which taking a swab causes an individual will be acquiesced

in when it is understood that the disease is not, as a rule, a dangerous one when treated early. The cardinal point is to ascertain who are infected; and this can be done by means of the bacterial test, which should, of course, be followed by intelligent isolation and treatment. The application of this test to every member of the given "group" as soon as a case of diphtheria occurs, is made practicable by the excellent laboratories already established, and from the fact that the laity are becoming more and more appreciative of its usefulness. It should be applied to both nose and throat, and a second test should be made after a few days to those in whom the first was negative.

A thorough use of the test would make unnecessary much of the quarantine that is so obnoxious and burdensome to many, and although it entails some expense, yet if looked at merely from a money point of view, it is cheaper in the long run. Unless the bacterial test is carried out systematically and intelligently, it will be necessary to continue to spend large sums of money for the care of patients who should not have been ill, and some lives will be lost that might have been saved. Very truly yours,

FRANCIS H. WILLIAMS, M.D.

## A CASE OF HYPNOTIC SUGGESTION.

Boston, November 24, 1896.

MR. EDITOR: Accounts of a most interesting case of the influence of hypnotic suggestion have been going the rounds of the Russian Press. The case goes to show very decidedly, how perfectly healthy individuals can, under the influence of strong impressions, become very susceptible to hypnotic suggestion. As the phenomenon occurred in what I may be permitted to call a natural (for a want of a better term) state, in contra-distinction to hypnotization induced artificially for medical or experimental purposes, and as the subjects were nine peasant girls—strong, buxom lassies, who from their mode of living can surely not be suspected of suffering from any neurotic taint—the case acquires a still greater interest.

It appears that P. W., the chief actor in the case, a girl thirty years of age, was of a religious turn of mind. Of a somewhat morose and sad disposition, she would keep aloof from the village "sociable" of any kind, devoting her spare time exclusively to prayers. She was possessed of an extraordinary memory, as, being perfectly illiterate, she nevertheless knew all the prayers and religious songs by heart. She would occasionally make pilgrimages to holy places, each time returning more religious than ever. After her last pilgrimage to Vilno, she declared that the Holy Virgin appeared to her, commanding her to become a nun, and devote her life to her service. Preparations having been made for her departure, the people who came to bid her good-by remained with her the whole night and most of the next day, all praying fervently. After the prayers she went, accompanied by a great crowd, mostly women, to the cemetery. There the praying was resumed, she working herself up into such a frenzy that she ran around with dishevelled hair and in a state of maniacal fury, from one to another, proclaiming herself a great sinner, and begging them to chastise her. Thence, accompanied by nine girls, who, as they declared later, were attracted to her by a power they could not resist, the journey was continued—all praying loudly, she proclaiming herself "the Queen of Heaven." She commanded them to completely undress themselves; and thus, perfectly nude, they lay on the ground, and while she was dancing over their naked bodies they offered no resistance, although all this took place in the presence of hundreds of people, who were attracted to this strange spectacle from the neighboring villages. When intercepted on their further progress by the authorities, they persisted in walking behind the wagon in which she was placed. From the wagon she issued to them orders of a most whimsical nature, as to bite each other and others, all of which were executed by them in the promptest manner imaginable.

Separated from her by mere physical force, they declared that, being attracted to her by some strange, unknown influence, they completely lost their will-power and were ready to do anything commanded by the religious maniac. Neither when she was prancing over their bodies, nor while biting each other, have they experienced the slightest sensation of pain; nor have they felt any shame or mortification at being looked at, while naked, by strangers. Their ages were as follows: one, thirteen; three, between sixteen and seventeen; three, between eighteen and twenty; two, about fifty.

It must be added, that the girl was always considered by the village women something of a saint previous to the occurrence, and thus wielded over them a certain power—that of a mental superior. Adding to this the extremely exciting surroundings and the inspired frenzy of the leader, it is not difficult to see, how these girls were wrought up to a condition where reason ceases to act, and the individual becomes the slave of his sensations and of an extraneous will.

I have entered somewhat into details, as I consider a more than superficial study of the case of great interest, especially to the neurologist. Very truly yours,  
A. ROVINSKY, M.D.

### DERMATITIS CAUSED BY X-RAYS.

259 Marlborough St., BOSTON, December 1, 1896.

MR. EDITOR: Brief mention is made in the JOURNAL, November 19, 1896, of a case of "Dermatitis caused by X-rays," published in the *British Medical Journal* of November 7th. A man was exposed to them for an hour, and again for an hour and a half, in order to establish the diagnosis of renal calculus. Exfoliation of the epidermis over the exposed side of the abdomen followed, and a granulating surface was left, like that after a severe burn, which had not healed in sixteen weeks.

A similar case has been recently under observation in the Massachusetts General Hospital, under the care of Dr. Warren. A young lady was exposed to the rays for half an hour on one day, and forty-five minutes on the following day, the tube being placed about six inches in front of her sternum. On the following day the skin over this region became red, and later "blistered." Three months subsequently, when seen by me at the request of Dr. Warren, early in October, there was an area of angry-looking granulations some three inches square, which had obstinately refused to "heal." The surface was very sensitive, and the region was the seat of severe neuralgic pains. It is reported that at the present date, November 15th, two small "open" spots persist, and that the region is still painful.

Very truly yours,  
J. C. WHITE, M.D.

### FRACTURE OF THE FIRST PHALANX OF THE LITTLE TOE.

SANTA BARBARA, CAL., November 18, 1896.

MR. EDITOR: In the JOURNAL of October 29th, Dr. Harold Williams reports a case of fracture of the first phalanx of the little toe. On account of the rarity of the accident, I contribute notes of two other cases, the first being a personal experience.

In going from my room to the adjoining bedroom, I struck the point of the little toe against the side of the doorway, forcing it backward and outward. The result was a fracture of the first phalanx with mobility and crepitus.

By one of those coincidences which physicians so often meet, I was called a few weeks later to a lady who had fractured the first phalanx in a very similar way.

The result was good in both cases. The fourth toe was used as a splint, but I found advantage from a silicate bandage in addition. Very truly yours,  
C. E. VAUGHAN, M.D.

### METEOROLOGICAL RECORD

For the week ending November 21st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer		Relative humidity.		Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..15	30.06	41	54	28	66	58	62	S.W.	S.W.	24	12	O. C.
M..16	30.17	54	62	45	61	70	66	S.W.	S.W.	8	7	O. C.
T..17	30.12	61	71	51	73	73	73	S.W.	S.W.	10	8	O. C.
W..18	30.20	52	58	45	86	86	86	N.E.	S.	12	7	O. C.
T..19	30.09	48	63	33	82	68	75	S.W.	N.W.	12	16	O. C.
F..20	30.60	28	33	24	58	58	58	N.W.	N.W.	10	12	O. C.
S..21	30.31	31	40	22	74	97	86	N.W.	N.W.	6	12	O. C.
												.30
												.13

\* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threat; N., snow. † Indicates trace of rainfall. — Mean for week.

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 21, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	566	194	13.26	16.15	1.87	1.02	4.25	
Chicago	1,678,967	—	—	—	—	—	—	—	
Philadelphia	1,164,000	374	111	14.04	12.69	3.29	3.51	8.37	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	491,205	190	61	15.27	11.13	1.59	2.65	6.89	
Baltimore	490,315	155	52	10.8	11.52	4.48	1.28	5.12	
Cincinnati	336,000	101	25	5.00	13.00	—	—	4.00	
Cleveland	314,587	79	35	13.86	7.56	1.26	1.26	11.34	
Washington	275,500	86	19	15.08	11.62	8.12	4.64	—	
Pittsburg	238,617	—	—	—	—	—	—	—	
Milwaukee	276,000	—	—	—	—	—	—	—	
Nashville	87,754	20	16	—	5.00	—	—	—	
Charleston	65,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	98,667	—	—	—	—	—	—	—	
Fall River	88,020	—	—	—	—	—	—	—	
Lowell	84,359	33	11	27.27	15.15	—	6.08	15.15	
Cambridge	81,519	12	5	25.00	25.00	—	—	16.66	
Lynn	62,335	18	2	16.66	—	—	—	11.11	
New Bedford	55,254	17	7	11.64	11.76	—	—	17.64	
Springfield	51,534	7	1	14.28	—	—	—	14.28	
Lawrence	52,153	16	12	12.50	18.75	—	—	6.25	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	10	5	20.00	—	—	—	20.00	
Brockton	33,157	11	3	9.09	9.09	9.09	—	—	
Haverhill	30,185	8	1	—	—	—	—	—	
Malden	29,709	9	0	—	44.44	—	—	—	
Chelsea	31,285	9	3	—	22.22	—	—	—	
Fitchburg	26,394	11	4	36.36	9.09	—	—	27.27	
Newton	27,622	12	2	8.33	8.33	8.33	—	—	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	4	0	—	50.00	—	—	—	
Waltham	20,877	2	0	—	—	—	—	—	
Quincy	20,712	—	—	—	—	—	—	—	
Pittsfield	20,447	5	1	20.00	—	—	—	—	
Everett	18,578	3	2	—	—	—	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,564	2	0	—	—	—	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 1,871: under five years of age 611; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 259, acute lung diseases 242, consumption 224, diphtheria and croup 124, diarrheal diseases 44, typhoid fever 37, measles 25, scarlet fever 11, whooping-cough 7, erysipelas 6, cerebro-spinal meningitis 5.

From measles New York 21, Lowell 2, Philadelphia and Boston 1 each. From scarlet fever New York 5, Boston 3, Providence, Cambridge and Lawrence 1 each. From whooping-cough New York 5, Boston and Washington 1 each. From cerebro-spinal meningitis Boston 2, New York, Lynn and Pittsfield 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending

November 14th, the death-rate was 20.8. Deaths reported, 4,826: measles 89, diphtheria 80, whooping-cough 67, scarlet fever 61, fever 49, diarrhea 40.

The death-rates ranged from 14.3 in Brighton to 34.1 in Plymouth: Birmingham 20.8, Bradford 19.6, Cardiff 19.2, Gateshead 24.9, Hull 21.0, Leeds 21.9, Leicester 18.0, Liverpool 24.4, London 19.8, Manchester 26.7, Newcastle-on-Tyne 18.2, Nottingham 24.1, Sheffield 20.1.

#### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 14, 1896, TO NOVEMBER 27, 1896.

Leave of absence for four months, to take effect about December 5, 1896, is granted MAJOR LOUIS S. TESSON, surgeon, Fort Ethan Allen, Vt.

The following named recently-appointed assistant surgeons will report in person to the president of the Army Medical School, Washington, D. C., for the course of instruction:

FIRST-LIEUT. LOUIS PERCY SMITH.

FIRST-LIEUT. MARSHALL MORGAN CLOUD.

MAJOR JOHN D. HALL, surgeon, is relieved from duty at Madison Barracks, N. Y., and ordered to Fort Wadsworth, N. Y., for duty, relieving MAJOR EDWARD T. COMEGYS, surgeon.

MAJOR COMEGYS, on being thus relieved, is ordered to Fort Sill, O. T., for duty.

MAJOR JOHN V. LAUDERDALE, surgeon, retired from active service November 13, 1896.

FIRST-LIEUT. BENJAMIN BROOKE, assistant surgeon, ordered to Chicago, Ill., to appear before examining board for examination as to his fitness for promotion.

The leave of absence on surgeon's certificate of disability granted CAPTAIN EUGENE L. SWIFT, assistant surgeon, is extended two months on account of sickness.

#### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 21, 1896.

A. F. MAGRUDER, surgeon, detached from the Marine Barracks, Wash., and placed on the retired list.

J. S. SAYRE, passed assistant surgeon, placed on retired list November 16th.

H. M. WELLS, medical director, detached from the Naval Laboratory, New York, ordered home and placed on waiting orders.

T. C. WALTON, medical director, detached from the Naval Academy December 15th, and ordered to the Naval Laboratory.

C. T. HIBBETT, surgeon, detached from the "Independence," ordered home and granted three months' leave.

F. W. OLCOTT, passed assistant surgeon, detached from the "Enterprise," November 27th, and ordered to the "Independence."

W. F. ARNOLD, passed assistant surgeon, detached from special duty and ordered to the "Enterprise," November 27th.

J. M. MOORE, passed assistant surgeon, detached from the "Texas," December 7th, and ordered to the "Castine," December 8th.

L. H. STONE, passed assistant surgeon, detached from the "Castine," December 8th, ordered home and placed on waiting orders.

S. B. PALMER, assistant surgeon, detached from the "Vermont," December 7th, and ordered to the "Texas."

P. LEACH, passed assistant surgeon, promoted to surgeon from November 15th, and T. C. CRAIG, passed assistant surgeon, promoted to surgeon from October 14th.

#### HARVARD MEDICAL SCHOOL.

##### EVENING LECTURES.

The next lectures will be given on Thursday, December 10th and 17th, at 8 P. M., by PROF. CHARLES S. MINOT. Subject: "The New Theories of Protoplasm." The profession are invited.

##### RECENT DEATHS.

DR. P. W. ELLSWORTH, one of the best-known physicians of Hartford, Conn., and a son of ex-Governor William W. Ellsworth, died Sunday. He was born in Hartford, December 5, 1814, and began practicing medicine in 1843. His grandfather, Oliver Ellsworth, was at one time chief justice of the United States Supreme Court.

SIR BENJAMIN WARD RICHARDSON, M.D., died November 31st, from apoplexy. He was sixty-eight years of age. He was born October 31, 1828, at Somerby, in Leicestershire, England. In 1856 he was elected a member and in 1861 a fellow of the Royal College of Physicians, and soon afterward became a fellow of the Royal Society. In 1873 he was Croonian lecturer and thereafter at different times was elected to membership in the various learned and medical societies throughout Europe. He was greatly interested in the problems of anesthesia, both local and general, and was one of the first to employ the ether spray for local anesthesia and methylene bichloride as a general anesthetic. He edited *The Journal of Public Health* and *The Social Science Review* for some years. For many years Dr. Richardson was president of the Medical Society of London and of the St. Andrew's Medical Graduates' Association. In 1868 he received a microscope by Ross and one thousand guineas as a testimonial from his medical associates in recognition of his many valuable contributions to science and medicine. At the Social Science Congress held in Brighton in 1876 he read a paper in relation to a model city of health, which caused much public discussion. His last work was on "National Health."

PROF. H. NEWELL MARTIN, who until recently held the chair of biology in Johns Hopkins University, has just died in England.

#### BOOKS AND PAMPHLETS RECEIVED.

Car Sanitation, Report of Committee, together with other Papers on that Subject, presented at the Buffalo Meeting of the American Public Health Association, September 15-18, 1896. Reprint.

The Surgical Treatment of Hemorrhoids. The Technics of the Buried Tendon Suture. Intestinal Obstruction after Laparotomy. By Henry O. Marcy, A.M., M.D., LL.D., Boston, Mass. Reprints. 1895-96.

Über die beim Scheitende Neugeborenen vorliegenden Indikationen. Von B. S. Schultze in Jena. Sonderabdruck aus dem Centralblatt für Gynäkologie, 1896, No. 37. Verlag von Breitkopf & Härtel in Leipzig.

Some Thoughts concerning Disease and Recovery, in their Relation to Therapeutics. By Solomon Solis Cohen, M.D., Professor of Clinical Medicine and Therapeutics in the Philadelphia Polyclinic, Lecturer on Clinical Medicine in Jefferson Medical College, etc. Reprint. 1896.

Further Observations on the Treatment of Spasmodic Torticollis. By Maurice H. Richardson, M.D., Visiting surgeon to the Massachusetts General Hospital, and George L. Walton, M.D., Physician to the Neurological Department, Massachusetts General Hospital. Reprint. 1896.

Five Years' Work in Surgery; Comments and Deductions based upon a Series of Thirteen Hundred and Eighty-seven Operations. By Horace Packard, M.D., Professor of Surgery, Boston University School of Medicine; Surgeon, Massachusetts Homeopathic Hospital, etc. Boston. 1896.

The Diary of a Resurrectionist, 1811-1812. To which are added an account of the Resurrection Men in London and a Short History of the Passing of the Anatomy Act. By James Blake Bailey, B.A., Librarian of the Royal College of Surgeons of England. London: Swan, Sonnenschein & Co. 1896.

Skiascopy and Its Practical Application to the Study of Refraction. By Edward Jackson, A.M., M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, Surgeon to Wills Eye Hospital, etc. Second edition, with 27 illustrations. Philadelphia: The Edwards & Docker Co. 1896.

System of Diseases of the Eye. By American, British, Dutch, French, German and Spanish Authors. Edited by William F. Norris, A.M., M.D., and Charles A. Oliver, A.M., M.D., of Philadelphia, Pa., U. S. A. Vol. I, Embryology, Anatomy and Physiology of the Eye. With 23 full-page plates and 362 text illustrations. Philadelphia: J. B. Lippincott Co. 1897.

A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George Frank Butler, Ph.G., M.D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons, Chicago; Professor of Materia Medica and Therapeutics, Northwestern University, Women's Medical School, etc. Philadelphia: W. B. Saunders. 1896.

An American Text-Book of Applied Therapeutics for the use of Practitioners and Students. Edited by J. C. Wilson, M.D., Professor of the Practice of Medicine and of Clinical Medicine in the Jefferson Medical College, etc. Assisted by Augustus A. Eshner, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic, etc. Philadelphia: W. B. Saunders. 1896.

A Treatise on Obstetrics for Students and Practitioners. By Edward P. Davis, A.M., M.D., Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic, Clinical Professor of Obstetrics in the Jefferson Medical College of Philadelphia, etc. Illustrated with 217 engravings and 30 plates in colors and monochrome. Philadelphia and New York: Lea Brothers & Co. 1896.



## Address.

THE MEDICAL DEPARTMENT IN TIME OF WAR.<sup>1</sup>

BY LOUIS A. LA GARDE,  
Captain and Assistant Surgeon, United States Army.

GENTLEMEN:—Upon the invitation of your surgeon-general I have prepared some notes which relate to the medical department of the United States army in the time of war. At a time when the State troops would be called to co-operate with the regular army your regulations would not differ from ours, and what I have to say in this instance will apply to us alike.

My remarks will relate (1) to the method of organizing the medical department on a war basis; (2) I shall take up the question of our present allowance of sanitary soldiers, medical officers, etc.; (3) I shall direct my remarks to the question of the necessity for an increase in the number of helpers to the wounded, which seems apparent with the use of the new military rifle.

(1) *Field Organization.*—In taking the field the medical officers and members of the hospital corps serving with troops in different parts of our country proceed with their respective commands, as a rule, to a point of rendezvous or base of operations. The medical officers are assigned by the chief surgeon, under the orders of the general commanding, to the various duties involved in the administrative and executive branches of the medical department.

The members of the hospital corps are likewise organized into two branches, namely, the one for duty in the field hospitals proper as cooks, nurses, clerks, apothecaries, etc., and the other as drivers to ambulances, as porters in collecting and removing the sick and wounded, and rendering first aid thereto.

The necessary tentage, instruments and equipment are carried in part by the various detachments arriving at the base of operations, and they are furnished in part by timely requisitions on the medical-supply depots, of which we have three principal ones at present, namely, at New York, St. Louis and San Francisco.

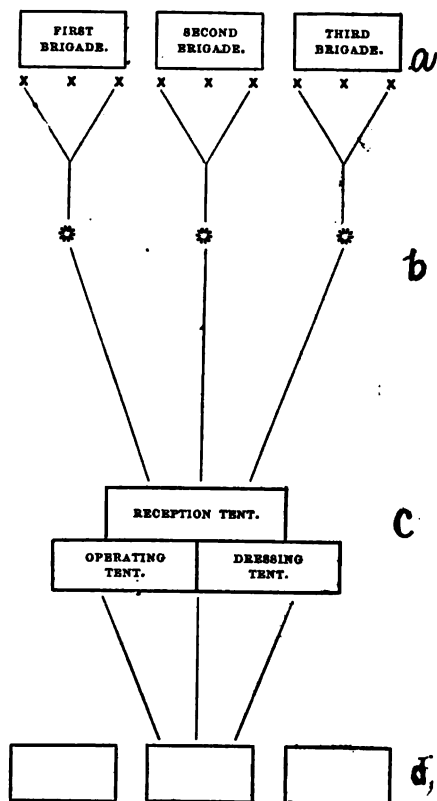
We have no specially defined plan to be followed in case of hostilities; yet medical officers are pretty well agreed that a system could be evolved from our present regulations as soon as the troops were made to assemble. Our regulations are sufficiently exact to suggest, as it were, the remedy of such lapses as may be apparent with the occurrence of each emergency.

(2) *Present Allowance of Sanitary Soldiers and Medical Officers.*—Our regulations provide that in time of war the privates of the hospital corps shall form two per cent. of the strength of the command; and that one acting steward to every ten privates of the corps and one full steward to every thirty of the privates shall form the standard upon which to base the number of helpers to the sick and wounded. The number of medical officers with troops in the field is on an average of three to each regiment, although this number is by no means constant, and it is possible, at times, to get along with much less, while certain emergencies are likely to arise when two or three times that number might be required.

This being the allowance of medical officers and

members of the hospital corps we see at once that when the troops are massed, the organization changes, with the arrival of the troops, to first, the regimental; second, the brigade; and third, the division hospital. In other words, the medical department, including the hospital corps, organizes *pari passu* with the organization of the troops.

In addition to this force of the hospital corps and medical officers, our regulations provide an auxiliary force among the privates of the fighting line. These



DIAGRAMMATIC DRAWING, SHOWING THE SEVERAL LINES OF MEDICAL AID ON THE FIELD.

(a) *Line of Battle.*—Regimental surgeons, orderlies, dressing cases, company bearers, first aid packages, stretchers, immediately in rear of fighting line.

(b) *First Dressing Places.*—Ambulance surgeons, pack animals with panniers, surgeons' tents, stewards, cooks and litter bearers of the hospital corps 1,000 yards behind fighting line, near water.

(c) *Ambulance Station.*—Surgeons' hospital corps men, ambulances, medical wagons, tents, operating tables, light cooking apparatus 2,500 yards from fighting line, near water, fuel and dwellings.

(d) *Division Field Hospital (3 Stations).*—Field folding furniture, bedding, medical supplies, etc., in vicinity of dwellings, water, fuel, large barns, hay, straw.

are known as litter bearers. Formerly they numbered four to each company, and they were taught the duties of first aid to the injured by the medical officers. It was their duty to assist the wounded in the fighting line until relieved by the members of the hospital corps proper. Very recently this scheme has been enlarged by orders from the War Department. The recent orders provide that not only four but all the men of a company shall be taught the duties of first aid to the injured, so that in time of battle any one or more of the men may be designated by the commander to remove the wounded or care for them in other ways.

The medical officers are no longer expected to instruct these privates; they are taught the duties of first aid, and are drilled in the handling of the wounded

<sup>1</sup>An Address delivered at the School for Medical Officers, M. V. M., at the South Armory, March 28, 1896.

on and off the stretchers, in and out of the ambulances, etc., by the company of officers.

The ambulances for the conveyance of the sick are distributed to the army at the rate of three to each regiment of infantry of five hundred men or more, two to each cavalry regiment and one to each battery of artillery. Two ambulances are allowed the headquarters of each army corps, and to each train of ambulances belonging to a division two army wagons are allowed.

This, briefly considered, is the method or organization of the medical department in our army on a war footing.

The work of such an organization is best studied by a diagram (see page 585) which is a modified copy from a recent article by Lieutenant-Colonel Forwood, U. S. A. It shows at once the disposition of the relief corps in the different parts of the field.

The topography of the field might be such as to require a considerable degree of variation in this scheme, in so far as the distance between stations is concerned.

This scheme is of course diagrammatic in the extreme. Such a bountiful arrangement as this would hardly ever be witnessed in any battle, but it will serve us as a working model.

(8) We now come to consider the question of the necessity for an increase in the number of helpers to the wounded, which seems apparent with the use of the new military rifle. With the old arm, experience taught us that the estimates already mentioned were sufficient to care for the wounded in the vast majority of instances, but now that we have discarded the large calibre rifle for the weapon of small bore, whose range and penetration exceed anything yet tried in the way of hand weapons, it is claimed by many writers that we will have a larger percentage of wounded, and that the additional work to be thus imposed upon the relief corps will be far beyond the capacity of our present allotment.

I might state, incidentally, that it is claimed that other causes will operate to impose additional work upon the relief corps, and here I have reference to the extended order of battle, by which troops are spread over more ground, and the increase in the percentage of wounded, which it is said will come from modern field artillery. The brief time at my disposal will not permit a consideration of the subject from the standpoint of the latter, and I will have to confine myself as much as I can to the effects of the new military rifle upon the question at issue.

If the casualties of battle are to be greater hereafter, there is no doubt that we should increase the numbers of our relief corps. We have no means of estimating the deadliness of the new military rifle — this can only be determined by future wars — but we can draw some deductions from the statistics of the past, by which we may be able to arrive at conclusions of reasonable value.

A study of these statistics gave us formerly a pretty accurate idea of the percentage of the wounded, which we might expect to find in a given battle fought with the old arm. In estimating the casualties of the battle heretofore, the percentage of wounds from rifles, carbines and revolvers were especially considered, because they formed the vast majority of all the wounds noted. The wounds from the artillery arm, bayonets and sabres formed but a fraction of the whole. We

do know from past experience, therefore, that the great majority of the injured noted in hospitals suffered from bullet wounds. The statistics of various wars shows this very prominently. The statistics of the Crimean war give the percentage of the gunshot wounds by rifle bullets at 60. In the war of the Rebellion the nature of the missiles was ascertained in 141,961 cases, and the surgeon-general's report says 90.1 per cent. were inflicted by rifle bullets. In the Franco-Prussian war Chenu's statistics gave the percentage of those receiving bullet wounds among the French at Gravelotte at 80.19. The same author on the part of the German army for the whole of the war shows that 91 per cent. of the wounds were inflicted by rifle bullets. It is thus seen that heretofore the casualties of battle have been especially identified with bullets from hand weapons, and in reckoning upon the casualties and havoc of future wars, I believe that the majority of the writers have special reference to the perfected military rifle-propelling, steel-armored bullets. Those who argue that our present allotment of two per cent. for a relief corps is not sufficient, cite especially the dangers of the new gun in so far as they lie in —

- (a) Greater penetration.
- (b) Greater dangerous space.
- (c) The employment of smokeless powders, which gives a clear field.

We may here state that increased penetration, superior velocity and extended range have ever been the aim of the ballisticians, and that the perfected military rifle of to-day is the gradual outcome of his genius. For the present let us consider *a* and *b*, and see by a study of past experience what has been the effect of their development upon the casualties of battle.

I should like to call your attention to some data I have copied from a tabulated statement by Longmore in the last edition of his great work on "Gun-shot Injuries." You will see that he gives the percentage of killed and wounded in certain battles, from Blenheim, which was fought in the days of smooth-bores, down to the Franco-German war (1870-71), which witnessed the use of a more perfect military gun.

PERCENTAGE OF KILLED, WOUNDED, ETC.

Battles.	Nation.	Strength	Killed	Wounded	Ratio of kill'd and wounded.
Blenheim, 1704, {	British allies, Gallo-Bavarians	55,000 60,000	9.00 20.00	14.00 23.00	1 to 1.6 1 to 1.1
Italian war, .	French, .	189,690	1.33	10.37	1 to 7.7
Whole war, '59, {	Sardinians, .	?	—	—	1 to 4.4
	Austrians, .	?	—	—	1 to 4.8
Shiloh, 1862, . {	Unionists, .	63,000	2.75	12.51	1 to 4.5
	Confederates, .	40,000	4.32	20.03	1 to 4.6
Gettysburg, '63, {	Unionists, .	117,350	2.41	11.68	1 to 4.8
	Confederates, .	68,352	5.12	21.21	1 to 4.1
Gravelotte, '70, {	Germans, .	278,131	1.60	5.46	1 to 3.4
	French, .	125,000	0.09	5.37	1 to 5.8
Sedan, 1870, . {	Germans, .	190,239	0.86	3.40	1 to 3.9
	French, .	124,000	2.41	11.30	1 to 4.6
Franco-German war, .	Whole German army,	387,576	1.97	10.83	1 to 5.4

A careful comparison of the data in this table shows that the percentage of wounded and the ratio of killed to wounded have diminished rather than increased since the days of Blenheim, and, as these engagements

were fought during a period of history coincident with the evolution of the military rifle, or, as we might put it, during a period of history coincident with the development of velocity, range and penetration of the projectiles of military hand weapons, we are forced to the conclusion that the casualties of battle have not kept pace with the improvements in the latter, and that it is very doubtful if an increase in the sanitary or relief corps will be rendered necessary from this source in the future.

The reason for a diminution in the casualties of battle is well understood, and it is not the purpose of this paper to enter into an explanation of it any more than to point out that, as the ballisticians has conferred range, penetration, dangerous space, etc., upon his projectile, the tactician has sought to neutralize its deadliness by altering his tactics from a close to an extended order, by avoiding front attacks when flank movements might accomplish the desired end and by resorting to those expedients best known to the military man.

(c) *The employment of smokeless powder*, which gives a clear field. In answer to the argument that smokeless powder will operate to increase the percentage of wounded it may be stated that the rifles of small calibre are proverbially inaccurate in the mid and remote ranges, and that for this reason a clear field does not offer any marked advantage. The inaccuracy in fire is said to be due to the hygroscopic property of the nitro compounds which compose the new explosives as well as to their poor keeping qualities, both of which cause varying velocities.

It has been proposed to counteract the use of smokeless powder by generating smoke on the field from explosives, chemical substances, etc., in order to conceal the troops from the fire of the enemy, or for any purpose calculated to give advantage in manoeuvring bodies of men. In addition to this the showy uniform and white tentage heretofore in use are to be discarded for materials with shades bearing but little contrast to those of the field. When we consider the resort to such expedients, in connection with the inaccuracy of the new arm, it is doubtful if even smokeless powder will have any influence to increase the casualties of battle, or to alter the present allotment of relief corps.

The character of wounds inflicted by steel-armored projectiles and our perfect technique in dressing them will have their weight in lessening the work of the sanitary corps in the wars of the future.

Before we proceed to the character of the wounds, let us study their regional distribution, as noted in former wars. The subjoined table is one often referred to by writers on gun-shot injuries. It shows that the regional distribution of wounds was learned in 245,739 instances, and that the different parts of the body suffered as follows:

WAR OF REBELLION (EXCLUSIVE OF KILLED IN ACTION).

Record of 245,739 Gun-shot Wounds.	Number.	Percentage.
Head, face, neck, . . . . .	26,400	10.7
Trunk, . . . . .	45,184	18.4
Upper extremities, . . . . .	87,783	35.7
Lower extremities, . . . . .	86,413	35.1

In addition to the foregoing we have statistics tabulated by Fisher concerning the wounds in the Prus-

sian army in 1870-71, giving the gross results of 61,168 gun-shot injuries, from which it appears that in every 100 men hit 12 per cent. were killed, 49 per cent. slightly wounded, 37 per cent. severely wounded, 10 per cent. remained with command for treatment.

The severe wounds among these were distributed over the target areas of the body as follows:

Severely wounded, 23,054.	Number.	Percentage.
Head and face, . . . . .	2,569	11.14
Throat, . . . . .	514	2.23
Chest, . . . . .	2,254	9.77
Back, . . . . .	793	3.44
Abdomen, . . . . .	1,890	8.20
Side, . . . . .	988	4.28
Upper extremities, . . . . .	5,628	24.41
Lower extremities, . . . . .	8,418	36.52
	23,054	99.90

From this table we find that more than 70 per cent. of the wounds were inflicted in the extremities. If we now go back to the character of wounds to be expected in future wars we find that it is especially true that the humane features of the wounds from the small-bore gun are observed in the soft parts and joint ends of bones. Those of the soft parts need not detain us since they will seldom be classed among the severe wounds.

With reference to the bony lesions of the extremities we may divide them into two classes, namely, those of the epiphysis and those of the diaphysis.

*Epiphysis.*—The old conoidal leaden bullets of large calibre invariably produced comminution and splintering in the joint ends of bone, and the injuries they were wont to cause in these anatomical parts were attended with marked shock, and they were always serious at best.

On the other hand, the destructive effects of the jacketed steel bullet in the spongy ends of bone, except at relatively short ranges, are not attended with comminution or fissuring, and the element of shock may be entirely absent or faintly marked. Instead of the enormous destruction of tissues noted by the old leaden bullet, we more often find guttering, or a complete perforation of the bone without fracture, and these appearances are specially noted at ranges between three and fifteen hundred yards.

*Diaphysis.*—Gun-shot injuries of the shafts of the long bones by the old leaden bullet of large calibre were characterized by extensive comminution; isolated fragments free from periosteal attachments; numerous fissures. On the contrary, the jacketed bullet causes less comminution; the smaller fragments are generally bound to the main fragments by periosteal attachments; the fissures are usually subperiosteal, and the bony lesions take more of the nature of perforations, such as are commonly seen in the joint ends. Complete perforations without fracture are not infrequently seen in the results of the experiments on cadavers and lower animals, and Dr. Arnold of the Navy, while giving his recent experiences in China in the annual report of his surgeon-general for 1895, details a complete perforation of both femora in the

same individual, without fracture, by a steel-armored bullet from a new Mauser. Taking all these facts in consideration I believe it may be stated without much fear of contradiction that the gun-shot injuries of the extremities, which have formed such a large percentage of the wounded, will be less severe in the wars of the future, and that the proportion of men in this class who will require transportation to the rear will be less than heretofore, and that, therefore, an increase in the number of porters from this source need not be apprehended.

Our present knowledge of treating wounds will operate materially to lessen the burden of the relief corps. In former wars sepsis was the rule in all wounds; the constant attention and frequent dressings entailed a vast amount of work on the medical department of the various hospitals. To-day by observing aseptic and antiseptic methods, it is the exception to witness suppuration in wounds; it is seldom that a wound requires to be dressed oftener than once per week; whereas it was necessary in the pre-aseptic era to change the dressings daily, and often twice per day. The saving in time, material and labor is at once apparent when we contrast the old methods with the new.

## Original Articles.

### ARTERIO-SCLEROSIS,

WITH REPORT OF A CASE OF THROMBOSIS OF THE BASILAR AND CORONARY ARTERIES.<sup>1</sup>

BY W. H. PRESCOTT, M.D.

ARTERIO-SCLEROSIS is a disease of the arteries, characterized by a thickening of their walls (which is due to a deposit in the intima) with a diminution in the size of the lumen. There are three divisions into which the disease may be separated: first, the nodular — arterio sclerosis nodosa — in which the disease is circumscribed, although it may be widely distributed; second, the senile, in which the change in the arteries is one of the signs of advancing years; and, third, general arterio-sclerosis, a disease of the middle-aged (or young), and which is the form to which reference is made when the disease is mentioned.

Thoma found in the fetus that there was a marked increase of the connective tissue in the intima of the aorta between the opening of the ductus arteriosus and the bifurcation, the increase taking place after the closure of the umbilical arteries. He claims this is due to the fact that the aorta is dilated after the closure of the umbilical arteries, and as a result of the accompanying irritation of the nerves of the aortic walls, an increase of the connective tissue in the intima is brought about. This increase of the connective tissue in the intima causes a diminution in the size of the lumen, and thus a return to the normal. The same increase of connective tissue is said to happen in the main artery supplying an extremity, when for any reason the extremity has been amputated.

In arterio-sclerosis there is a disease of the media (with a destruction of its cells) which allows a dilatation of the vessel — this dilatation being followed by a deposit of (or increase in the) connective tissue in the

intima, thus bringing the lumen of the vessel nearly to its normal size. This thickened intima may become degenerated and an "atheromatous plaque" result. After death this plaque appears as a slightly elevated patch of varying size and usually yellowish in color; but in life there is a depression (due to the blood pressure) corresponding to the degenerated area. This degenerated area may be partially destroyed, or washed away, and a loss of substance result — the so-called atheromatous "ulcer." A thrombus may be formed at this point, or the wall give way and an aneurism be the result.

*Etiology.* — Many things have been said to contribute to the destruction of the media: hard work combined with worry, chronic alcoholism, lead-poisoning, gout, syphilis, articular rheumatism, endocarditis, typhoid fever and scarlatina. In several cases which I have seen none of these could be held to be the cause, but another infectious disease, namely, influenza, might be. Dr. J. Homer Wright tells me he once heard Dr. Osler say, "arterio-sclerosis — the result of worshipping at the shrine of Vulcan, Saturn, Bacchus or Venus."

The symptoms depend a good deal upon the part most affected; an arcus senilis is common, and the arteries of the extremities may be quite rigid. "Edema and ascites are rare, except possibly just before death" (Councilman). When the arteries of the brain are affected there may be persistent headache, vertigo, loss of consciousness, hemiplegia, and other forms of paralysis. The latter symptoms are due to thrombosis, hemorrhage, embolism or spasm (?) of the arteries. Embolism is rare, and is secondary to some change in the heart or its valves. Hemorrhage may result from the rupture of a small aneurism. Spasm of the arteries is a theoretical cause, but may explain the numerous attacks of what may be called transient paralyses, with complete recovery in the intervals. When the coronary arteries are affected there is usually an irregularity in the strength and rhythm of the heart's action with the symptoms ascribed to a fatty heart or to interstitial myocarditis, or there may be attacks of angina in which the pulse-rate may differ on the two sides (arterial spasms?). Rupture of the heart wall may occur with hemorrhage into the pericardium, or a dissecting aneurism be the outcome; in these last two cases the only symptom may be sudden and severe pain in the epigastrium, with death as a result immediately, in a few hours or days. When the arteries of the kidney are affected there is a slight trace of albumin in the urine, with an occasional cast; but in those cases which I have seen where the urine was carefully examined, there has not enough abnormal been found to warrant a positive diagnosis of renal disease (the amount of urine is about normal or small). Of course, there may be advanced renal disease accompanying (or due to) the arterio-sclerosis; and in these cases the chemical examination would show the disease which is present. In arterio-sclerosis there is some increase of connective tissue in the kidney (which may be focal), and there are some depressions in its surface. The heart is usually enlarged in some cases to a great degree without any evidence of valvular disease. Dr. Councilman reports two cases where the heart weighed 800 and 850 grammes respectively. The absence of hypertrophy does not rule out the disease.

I believe many cases of indigestion are due to changes in the stomach and intestines, the result of this disease.

The treatment has hitherto been very unsatisfactory,

<sup>1</sup> Read before the Clinical Section of the Suffolk District Medical Society, October 21, 1896.

and purely symptomatic combined with strict attention to diet.

All causes of worry should be removed, and no hard work allowed.

The subcutaneous injection of sterilized solutions of glycerophosphate of soda, as in the case I am about to report, has been followed by considerable improvement, and its success would warrant a further trial of it.

The method of administering is simple. One to two cubic centimetres of a sterilized solution of glycerate phosphate of soda, each cubic centimetre containing twenty cubic grammes of the salt are injected daily into either gluteal region behind the great trochanters. Absolute asepsis is requisite. This method was first suggested by Dr. Albert Robin in *Le Bulletin Médicale*, April 25, 1894.

C. H. C., sixty-one, male, born in Massachusetts. Family history good. No venereal history. At seventeen was thought to be "in a decline" and went West; from that time until five years before his death was very well. At this time had influenza. Two years after that he was irritable; this lasted a year. Fourteen months before he died, while in Spain, he became dizzy, staggered, and was not able to look up. This lasted only a short time. Another similar attack next day; kept pretty quiet for a week, then went to Paris and London. From London he went to Germany, where he "caught cold" and felt weak. Came to Boston. Examination of urine was negative. Heart thought to be fatty; and he was advised to give up smoking. Diagnosis of arterio-sclerosis made at this time. Improved very much; and when he went abroad a few months later, looked bright and felt as well as he ever did. Reached Cairo about December, and while there had another dizzy spell, and was advised to diet.

On January 26, 1896, while up the Nile, had an attack of hemiplegia, with difficulty in his speech. Was taken to Cairo, where he had another attack; this time paraplegia, although there was no trouble with bladder or rectum. He reached Paris in April, and improved very much under the subcutaneous injections of a sterile solution of phosphate of soda in glycerine. His speech was thick all this time. In the latter part of May he had another "shock," but soon rallied, and made the journey home without trouble or incident.

I met him in New York May 30th. He was then able to walk pretty well, could follow conversation fairly, and possessed a good appetite. There seemed to be no paralysis, but marked weakness. The speech was a little thick, but could be readily understood; tongue coated; pulse 76, regular and of good strength. The next day we came to Boston, the journey being made comfortably and without incident; the pulse was the same in rate and strength as at the beginning. A week was spent in Boston, with nothing worthy of note. Appetite remained good. A ride of an hour was taken every day. From this time until June 27th Mr. C. remained in about the same condition, perhaps becoming a little weaker. On this date his pulse intermitted for the first time, but the rate remained the same: there was a loss of a beat in every twelve. During the next ten days his mind became clearer, but he was not quite as strong. His speech was very good and easily understood. During all this time there had been rheumatic (?) pains in the shoulders, which were somewhat relieved by moving the arms.

There was much itching of the face and head, and a sensation of prickling in his tongue which felt thick.

July 8th the pains in the shoulder, and the movements in consequence, became more marked, and were relieved by a subcutaneous injection of one-eighth of a grain of sulphate of morphia every night about five o'clock. July 12th he did not look as well; and when he came back from his ride and had walked up stairs, his pulse was 92, but it soon fell to 84, which had been its rate for a few nights. There was no regular intermittence but an occasional beat would be missed; a thing noted at this time was that while the pulse was pretty strong the heart-sounds seemed weak and distant. July 13th he did not feel well and had nausea; he remained up stairs; in the afternoon he vomited, but went to sleep at eight and slept until two A. M., July 14th, when he became restless and wakeful. There was nausea during the morning with some vomiting. About twelve there were convulsive movements, with distortion of the face and outbreaks of crying. There was a sensation of a bubble in the ear. The left side, including that side of the face, was completely paralyzed. Mustard pastes were applied to the chest and all the extremities; subcutaneous injections of morphia (one-eighth of a grain) and six grains of calomel by stomach (which was retained) were given; about one he became quiet, and soon after unconscious. His pulse and respiration were normal; his pupils were equal (one-eighth of an inch across), and responded to light. His respirations soon became more rapid (30), his pulse 96.

About this time the right side became paralyzed; that is to say, he never moved a muscle from Tuesday, the 14th (his eyelids spasmodically opened and shut). There were a few light twitchings of his right hand on July 16th. Involuntary micturition began July 14th at midnight; no movement of the bowels. Death was momentarily expected from July 15th at three A. M. The right eye was wide open most of the time and could not be kept closed. All day on the 16th there was a difference noted in the strength and rapidity of the pulse on the right and left sides; at one time that on the left side was twelve beats slower than that on the right. All day Thursday (16th) the pupils were equal and reacted to light. At 10.30 P. M., July 16th, while sitting with my hand on the pulse, which was 160, it suddenly dropped to 44 and became very irregular; in ten minutes it was 160 again. The respiration and heart failed equally from this time, and both stopped almost simultaneously at 12.34 A. M., July 17th. At no time was any murmur heard anywhere.

Urine passed involuntarily July 16th. Color high; reaction very acid; specific gravity 1.028; urea +; uric acid +; chlorine normal; small trace of albumin; sugar absent; some sediment; urates, with a few bladder cells; no casts found.

*Autopsy*, July 17th, 4 P. M., about fifteen hours after death:

Body well developed and nourished. Rigor mortis present. Lividity of dependent portions. Pupils equal. Arcus senilis well marked.

Dura mater everywhere firmly adherent to the calvarium. Convolutions small; sulci deep; brain not as firm as usual; one small area of softening in the white matter of the right hemisphere, beneath the anterior ascending convolution, and another similar area in the optic thalamus. These areas were about one-quarter

of a centimetre in diameter and a little darker than the surrounding brain; otherwise nothing in the brain to suggest a hemorrhage, and these I considered to be due to the plugging of the arteries. All the arteries of the brain were very atheromatous. The carotids as they entered the skull cavity were like pipe-stems, but contained no clots. The basilar artery was tortuous with thickened walls (in two places calcareous), and its lumen was filled for its entire length with a solid clot somewhat firmly adherent in places to the intima. The arteries of the fissure of Sylvius, the posterior communicating and the anterior cerebral also, contained clots. The anterior communicating were thickened and small, but did not contain clots.

The meninges were much congested, but there was no evidence of any exudation.

The arteries everywhere showed evidences of atheroma, even the pulmonary arteries.

The aorta contained many patches of atheroma, some with calcareous deposits in them.

At one place in the arch, just opposite the opening of the left carotid, there was a patch of atheroma, one and one-half centimetres in diameter, with an area of necrosis in the centre, all the layers being destroyed; there was no thrombus at this point.

The pericardial sac was obliterated.

Heart about normal in size — all the valves competent, and showed nothing abnormal.

Upon opening the left ventricle, its cavity was found to be nearly filled with a thrombus attached to the wall. Upon removing this thrombus (which was made up of stratified blood-clot), the heart muscle was found to be very thin over an area five centimetres in diameter, and for a space two centimetres in diameter the wall was made up simply of adherent layers of the pericardium, upon the ventricular side of which there was a calcareous deposit two millimetres thick. This calcareous matter extended in places into the thrombus.

The right coronary artery was atheromatous but patent. The left coronary artery was atheromatous, and plugged with clots which had become calcareous. These clots began about one centimetre from the opening of the artery into the aorta.

The lungs were dark in color, crepitant, floated in water. Upon cut section, much frothy fluid tinged with blood could be squeezed out. No evidence of any former tubercular trouble. The mucous membrane of all the bronchi was much congested and covered with mucus.

Stomach and intestines normal.

Pancreas filled with fat.

Kidneys normal in size, and capsule peeled off readily. Cortex slightly diminished; numerous depressions on the surface.

Liver of chronic passive congestion.

Bladder normal.

Spleen two and one-half times the normal size and quite firm.

Testicles normal, soft.

Scar, one centimetre long, about two centimetres above the outer part of right eyebrow, but no evidence of old fracture beneath. No other scars found. Dupuytren's contraction of fourth and fifth fingers of right hand and thumb of left.

Anatomical Diagnosis: general arterio-sclerosis, atrophy of brain, thrombosis of arteries of brain, thrombosis of coronary artery, parietal thrombosis of

left ventricle, obliterating pericarditis, destruction of heart muscle, chronic splenitis, chronic passive congestion of liver, kidney of arterio-sclerosis.

Cause of death: primary arterio-sclerosis, immediate thrombosis of basilar artery and the coronary artery with parietal thrombus of heart.

Microscopical examination of a cut section of the basilar artery showed a great increase in the intima, with a loss of substance at one place, and to this "ulcer" the clot was adherent. The kidneys showed a slight increase of connective tissue, with thickening of the intima of the vessels.

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### A CASE OF SYPHILIS OF THE HEART.<sup>1</sup>

BY FREDERICK OGGESHALL, M.D.

THE case which I am about to report seemed to me and to the gentlemen who saw it with me one of great interest from the rarity of the lesion and the utter obscurity of the symptoms. I shall enter into full details as to the patient's previous history, because it was so misleading that it might well have led to a different diagnosis, and to a much more favorable prognosis than the result justified.

I was consulted last winter by a gentleman who complained of a dry, irritating cough, and of feelings of languor and exhaustion upon the slightest exertion, and nothing more.

He was a well-developed, well-nourished man of thirty-three, a teacher and writer by occupation, a fine athlete, and in the habit of practising difficult and exacting gymnastic feats. I had known him for four years, during which time he had always appeared to me to be in the best of health. He said he had not consulted a physician before for more than ten years. He had been accepted without hesitation by two conservative insurance companies within the past two years.

When a boy, he had had pneumonia twice, both times in the left lung, and had had scarlet fever with which he was very ill. Twelve or thirteen years ago he had been very wild, had occasionally abused alcohol, had smoked to great excess, had had gonorrheal arthritis twice. Twelve years ago he had a hard chancre, for which he was treated for three months, and from which he had never noticed the slightest symptom since. He had begun treatment before secondary symptoms appeared, as his physician was certain about the nature of the sore, and they had never manifested themselves.

Of late years, his life had been very different. He had been married nine years. (His wife had had one still-born, but no living child.) He had been a total abstainer for the last two years, and had only used alcohol occasionally for some years before. He smoked two or three cigars a week; but he afterward acknowledged that he chewed about four ounces of tobacco a week. Having a social position to maintain, he was naturally ashamed that he should be known to have such a filthy habit, and therefore he

<sup>1</sup> Read before the Clinical Section of the Suffolk District Medical Society, October 21, 1896.

never expectorated, but kept a small piece of tobacco under his tongue, renewing it frequently, and swallowing all the juice; so that he got the full benefit of the nicotine.

He had been doing very hard intellectual work for the past ten years, and taking much violent exercise in the gymnasium. Had had one vacation of about three months, in all that time. He had had much business worry and domestic unhappiness, to drown the thoughts of which he had, for years, been in the habit of studying and writing late into the night, often not going to bed until nearly morning.

He was despondent about himself, having told several friends that he should not live long. I had been previously told by his friends that he said he had angina pectoris and heart disease, and that he expected to die of locomotor ataxia. He had often complained while exercising of severe paroxysms of pain in his left side. His father and another relative had committed suicide to escape, it was said, from the sufferings of locomotor ataxia. There was no phthisis in the family.

On being questioned as to his present condition, he said that he had not known what it was not to feel tired for a year past. Had felt feverish every evening for the past three weeks. Anorexia for the past month, with nausea at the sight of food, and vomiting within a few minutes after swallowing solid food. Had not tried for several weeks to take any nourishment except hot milk diluted one-half with water, which he was always able to retain, and, occasionally bread and beef-tea. Was not short of breath, but had severe pain throughout the left chest on exercising. Had not raised the least quantity of sputum with his cough and never felt as if there was anything to raise. Had lost some weight—he did not know how much—in the last six months. No night-sweats.

On examination, the temperature was found to be  $101.5^{\circ}$ ; pulse 65, regular, and of perfectly normal quality in every way. The tongue was pale, flabby, clean. Mucous membranes pale. Right chest slightly hyper-resonant, otherwise normal. Left chest, respiratory and voice sounds seemed a little distant, percussion slightly less resonant than right throughout. On deep inspiration, which caused sharp pain in the left axillary and precordial regions, the left side of the chest expanded markedly less than the right. Heart's dulness extended almost to the nipple line. The apex could be most distinctly felt in the fifth interspace in the nipple line. Heart-sounds normal, except a slight roughening of the first sound, most distinctly heard to the left of the sternum in the third interspace. This was so slight, however, that I was not certain that there was anything abnormal. Urine, a very small quantity of which was obtained while he was in my office, contained a faint trace of albumin; specific gravity, by beads, between 1.015 to 1.020.

He was asked to return in a few days, and to bring, if possible, some sputum and enough urine for complete examination. Meanwhile he was given treatment for the stomach and a sedative for the cough, but told that rest and change of habits as to work and exercise were of vastly more importance. He did not return. I was in the habit of meeting him frequently, and from such opportunities for informal questioning, I was able to learn that the cough was better through the day but getting worse than ever at night, that his digestion was improving, that he could get no sputum,

could never remember to save the urine, and that for the present he could not stop work. He seemed very despondent about himself, and at the same time too indifferent to try to follow advice.

Soon after his visit to me he made a hurried journey to a distant State in very cold weather, to attend some teachers' meeting; was very much exhausted, and felt that he "had caught cold." Cough was worse, but still perfectly dry. Stomach became worse than ever. I learned afterward, that about this time he was seized with a severe pain in the precordial region after performing a difficult gymnastic feat. He became speechless for a few minutes and almost pulseless, according to the bystanders. He soon recovered, however, sufficiently to walk home leaning upon the arm of a friend. He said he had not lost consciousness. He was not seen by any physician at this time. Some days after, he was seized with vomiting in the street while walking home after an evening spent in violent exercise in the gymnasium.

About three weeks after his visit to me, he found himself feeling so weak and ill that he at last consented to stay at home until he felt better. After he had been confined to the house for two days, his illness suddenly assumed a new form. He was asleep upon a couch about three in the afternoon, with no one but his wife in the room, when, according to her account, for he could remember nothing, he suddenly started up in a kind of convulsion and fell upon the floor unconscious. He was pulseless at the wrist, and was thought to be dead. The nearest doctor was called, a homeopath, who worked over him for several hours before consciousness, or at least intelligence, returned. During this time the pulse was said to have been very slow. Toward evening he recovered, and described himself as feeling comfortable except that he was very much exhausted. He slept well that night, and got up the next morning saying that he felt better than he had felt for months. He took a bath, dressed, walked about the house, ate a little breakfast, and smoked a cigar.

About two P. M. that day, which was Saturday, he was again upon the lounge, when he fell into another convulsion like that of the day before. The same doctor was called. The patient became conscious after some time, and asked that I should be sent for. I was, however, out of town, and Dr. C. P. Putnam was called; but he could not be found for several hours. Meanwhile, the doctor present sent for another homeopath in consultation, and they stayed with the patient until I arrived about eight P. M. They told me that the condition in which I found him was practically the same in which they had first seen him, except that he was now perfectly conscious. Their treatment had been most unhomeopathic—doses of brandy, nitroglycerin, and tincture of digitalis, administered hypodermically. Dr. Putnam came in before I had completed my first hasty examination of the patient, and we went over him together.

The patient was lying, half-dressed, upon his back on a couch. Face pale and somewhat cyanotic. Respiration 42 to a minute. Pulse irregular, very compressible, 15 to 20 to the minute. Apex could not be felt. Cardiac dulness extended to the nipple line. A loud murmur was heard all over the cardiac area, but most distinctly at the base to right of sternum, replacing both sounds as well as I could describe it, and resembling nothing I had ever heard before. It gave



me the impression of a large foreign body obstructing the current. Dr. Putnam described it as though the blood was flowing through a mesh-work of wires. Temperature 97.4°. Patient was perfectly conscious and intelligent, but too weak to speak much above a whisper; complained of pain, as of "a great weight pressing on his heart."

I remained with him throughout the night, expecting death to occur at any moment.

During the next twelve hours after I took charge of the case, its history was as follows: The pain soon disappeared and the patient was comfortable, except for nausea at times and for difficulty in "getting air enough," as he expressed it. He was perfectly rational and conversed in a feeble voice; was wide awake. At intervals of from twenty minutes to an hour, he had a slight tonic convulsion, sometimes assuming a position of slight opisthotonus, but generally raising himself partially up, the hands clenched, the eyes fixed and staring. He sometimes ground his teeth, but did not froth at the mouth. There was no clonic spasm of the extremities, nor twitching of the face. This would last from one to three minutes, when he would fall back apparently dead. After receiving a hypodermic of strychnine nitrate (one-fiftieth of a grain), one-tenth of a grain of nitroglycerin in solution dropped on the tongue, and an enema of an ounce of brandy in water, he would wake up as if from sleep, and remain perfectly rational until the next attack. How much the stimulation had to do with causing or hastening his revival after one of these attacks I hardly knew; but I continued it as there seemed nothing else to be done. Just before one of the convulsions his pulse would fall to 15 or 16 a minute, and for a short time after renewed stimulation it often rose to 24; most of the time it was 18 to 20. There were pretty distinct Cheyne-Stokes respiration in short cycles lasting about a minute, 40 breaths; and there was a curious correspondence in the heart's action. During the quarter-minute in which the respirations were most energetic, there was one heart-beat, preceded and followed by an interval of seven to eight seconds, in which nothing could be heard over the heart with the stethoscope. The remaining beats were pretty regularly distributed through the remaining three-quarters of the minute. He vomited frequently small quantities of a substance resembling thin dark soup. He had taken no food since morning. He passed urine involuntarily during one of the convulsions, but very little. Toward morning when an attempt was made to obtain a specimen for examination by catheter, the bladder was empty. The pulse gradually improved in quality during the night, and the patient said he felt much better.

At eight o'clock Sunday morning, a specimen of urine was passed voluntarily and given to Dr. J. N. Coolidge for examination. His report was as follows:

"Color high, specific gravity 1.024, acid reaction, sediment considerable, urophein +, indican +, urea 1.26 per cent., chlorine normal, earthy phosphates normal, alkaline phosphates none, albumin one-eighth per cent. Bile pigments and sugar absent. Sediment: occasional squamous cells, numerous small round cells and leucocytes, numerous blood globules, many hyaline and finely granular casts — small, medium, and large, with epithelium and blood adherent."

By this time the patient seemed strong enough to

bear removal to a bed in the next room. The temperature was 98.2°, pulse varying from 20 to 25. There was no convulsion after seven A. M. Sunday until about five A. M. Monday. He was seen in consultation by Dr. Fitz on Sunday afternoon, and I asked Dr. Putnam to see him again, which he did late that afternoon. He thought him distinctly better. The vomiting had stopped. He was given enemata of brandy and peptonized milk every four hours, which he retained without difficulty, but still felt so nauseated at the idea of food that nothing was given by the mouth except a little matzoon, which he relished and retained. He slept about four hours during Sunday night.

Monday morning he had a slight convulsion about five, as I have said; no more throughout that day. There was a normal movement of the bowels. Respiration 30 to 35, pulse varying from 18 to 30. Most of the time about 20, of good strength. The character of the murmur had become by Sunday, and continued from that time, more like an ordinary hemic murmur.

Tuesday, after a good night, felt fairly comfortable. Pulse from 20 to 30; respirations about 30. Took a good deal of matzoon, and enjoyed it. Nutrient enemata and nitroglycerin were continued. No convulsions.

Wednesday morning, after a restless night, there was a slight convulsion at about four A. M., no change after it. About ten A. M. a severe convulsion, followed by unconsciousness for a quarter of an hour. Another slight convulsion at eleven; a pretty severe one at two P. M. In all of these urine and feces were passed involuntarily. There was no voluntary action of bowels or bladder this day. He seemed stronger, however, and felt stronger between the attacks. There was no vomiting. Pulse from 20 to 24, sometimes as high as 30. Temperature normal. At six P. M. he had a very violent convulsion, the worst he had had. He struggled, and had to be held to keep him from falling out of bed. This lasted nearly ten minutes. When he regained consciousness his pulse was better than at any time previously, 40 to the minute for some time. When this convulsion occurred, I was, for the first time since the beginning of his illness, not within easy reach, and Dr. Fitz was sent for. I arrived before Dr. Fitz had left, and we agreed, I think, that the patient was much stronger and the action of his heart distinctly better than when we saw him together on Sunday. After this he was bright, and talked a good deal about indifferent subjects. He dropped asleep about nine P. M. after taking some matzoon. At ten he awoke quietly, turned over on his side, had a very slight convulsion and died without speaking.

The autopsy was performed the next day by Dr. Whitney in the presence of Dr. Putnam and myself. The lesions found in the heart were subsequently shown to be syphilitic. Dr. Whitney has kindly consented to give the pathological report of the case.

In conclusion, I have only to say that I must confess that I did not make a diagnosis, when I first saw the patient on Saturday night.

I was strongly impressed with the idea that there was probably a large ante-mortem thrombosis in the right ventricle, and expressed the opinion that death was imminent. As the time wore on and the patient did not die, and even seemed to be gaining a little, I

ceased to have any opinion on the subject. At the consultation, an intercranial lesion of some kind, uremic poisoning and syphilis were only mentioned to be put aside for what seemed good reasons. There was little to make out a clear proof of syphilitic infection, and the symptoms did not resemble those of the best-known cases of cardiac gummæ. On the other hand, there was everything in the patient's past history to point to the possibility of a complete nervous break-down; and the idea of neurotic bradycardia, with its more cheerful prognosis, seemed confirmed by the obvious improvement in the patient's condition in many respects. The only thing, however, about which any one could feel certain was that the convulsions were of the character of so-called cardiac epilepsy, due to the cerebral anemia which was caused by the bradycardia.

### Clinical Department.

#### TWO CASES OF CARCINOMA OF THE BREAST IN YOUNG ADULTS.

BY JOHN B. SHOBER, M.D., PHILADELPHIA,  
*Surgeon to the Howard Hospital and Assistant Surgeon to the Gynecæan Hospital.*

THE serious importance of all tumors of the breast, and the advisability of early operative procedure when malignancy is even suspected, have been so frequently insisted upon in recent literature that every case of mammary tumor demands our careful study and most earnest consideration.

There is a widespread belief that carcinoma rarely occurs under the thirty-fifth year, and that if a tumor develops before this period, say in the twenties, it cannot be malignant. The writer has seen three cases where mistaken diagnosis, based upon this consideration, have resulted most unfortunately for the patients; extensive mutilating operations being subsequently required with recurrence in two of them.

The age of the cases about to be described and the sex of one of them make them interesting and worthy of record.

CASE I. H. T., *male*, age twenty-three, a laborer. He was apparently in robust health, of good muscular development, and had had no previous illness. There was no history of tuberculosis or carcinoma in his family. He had been suffering for about six weeks with a painful affection of the right nipple. The pain was not constant, but at times it was very sharp and lancinating. A distinct lump or induration, about a half-inch in diameter, was felt immediately beneath and slightly adherent to the nipple. It moved freely over the deep fascia. Pressure caused pain and a discharge of a small quantity of lacteal fluid.

During the next four weeks the case was treated expectantly by applications of ichthyol, belladonna and iodoform ointments. No improvement having taken place, the breast was removed by operation.

The tumor was disc-shaped, one-half an inch in diameter, white and hard. The microscope showed certain portions of the tumor to consist of hyperplasia of fully formed connective tissue with dilated and tortuous milk ducts. Other sections of the tumor presented the appearance of true glandular carcinoma, consisting of nests of closely packed epithelial cells, surmounted by masses of fibrous connective tissue. The adjacent

lymphatic glands showed no carcinomatous infiltration.

This case made an uneventful recovery, and has had no recurrence. It has been eight months since the operation.

CASE II. The second case is that of a female, age twenty-four, single. She was fairly well nourished, but had always been delicate. Menses began in her eighteenth year; always scanty, irregular and delayed. She had never had a serious illness, but her family history was bad. Her mother died of carcinoma of the uterus; two maternal aunts had carcinoma of the breast, and died before they were forty. Her father lived until he was sixty-seven; but when he was sixty his thumb was amputated for a growth which was said to be epithelioma.

One year before the patient came under observation she was struck violently upon the left breast. A month or so later she noticed a small lump developing at the seat of injury. It increased slowly but steadily in size, was painful only on pressure, and caused her little if any physical annoyance. The knowledge, however, of the tendency to cancer in her family worried her considerably, so that she presented herself quite prepared and anxious for an operation.

The tumor was situated in the upper portion of the breast. It was about the size of an English walnut, slightly adherent to the overlying tissues, but freely movable over the deep fascia and laterally. It was round, hard, and seemed to be encapsulated. There was no perceptible enlargement of the axillary or adjacent lymphatic glands. The operation consisted of removal of the entire mammary gland. It seemed quite unnecessary to remove the pectoral muscles or to attack the axilla. The wound healed by first intention, and there has been no recurrence in ten months.

The pathological report is as follows:

There is very marked proliferation of connective tissue between the glandular acini, almost sufficient to justify the opinion of intercanalicular fibroma. As far as the epithelial elements are concerned, there is found to be an extensive proliferation of the cells of the acini, giving rise to solid nests in places and to accumulations at the ends of acini in other places, and in many situations a marked tendency to break through the basement membrane and proliferate outside. These features of the tumor suffice to characterize it as a carcinoma, probably combined with fibromatous change.

The case illustrates the advantage of early diagnosis and prompt operation. The growth seemed to be purely local and confined. It is impossible to say how soon the adjacent lymphatic structures might have become involved. Once involved, the modern radical operation with ablation of the pectoral muscles and thorough clearing out of the axillary space would have become imperative.

PIGEON CALLS. — Dr. Harrey, a Scotch physician, is said to make a practice of leaving with such patients as are likely to require his prompt attendance one or more carrier pigeons to be dispatched with messages. He also takes the winged messengers with him on his rounds and sends them back to his office with prescriptions to be filled. It is not stated whether or not they carry back the medicine to the sufferer. — *Medical Record.*

## Medical Progress.

### REPORT ON SURGICAL PROGRESS.

BY H. L. BURRELL, M.D. AND H. W. CUSHING, M.D.

(Continued from No. 22, p. 572.)

#### TREATMENT OF GANGRENOUS HERNIE.

BOGDANICK<sup>18</sup> advocates immediate resection in these cases, and describes his method. The essential point of the technique is the attempt to make an aseptic wound before the resection of the intestine. He claims that this is accomplished by dissecting off the sac, after opening it, to the hernial ring. It is then ligated and removed, with any gangrenous omentum which it may contain. The tissues thus exposed he protects from infection by irrigation of carbolic solution and sterile gauze. The gangrenous portion of intestine is now held in place, and the constricting ring is divided by a sterile instrument. The freed intestine is drawn out till healthy areas appear. The loop is irrigated with the antiseptic solution as often as necessary to prevent its being a source of infection. When ready the loop is clamped, resected, and the resected ends reunited. It is then returned to the abdomen. The union of the intestine may be by suture or mechanical appliance, at the option of the operator. The abdomen is closed without drainage. The writer strongly recommends the use of suture for union of the divided intestine in preference to plates or buttons. The operation is satisfactory and its details attractive; but for cases where the shortest possible surgical interference sufficient to save life is the only thing to be considered, any operation requiring one hour or more for its completion does not appeal to a majority of surgeons.

#### TWO CASES OF OBTURATOR HERNIA.

Mr. William Anderson<sup>19</sup> has recorded two cases of obturator hernia, one of which was recognized, operated upon and recovered. The other was said to be a case of intestinal obstruction and had a celiotomy. At the post-mortem examination a knuckle of small intestine was found strangulated in the left obturator canal. He states that the signs of strangulation do not always clearly indicate the locality of the mischief. They may be analyzed as follows:

- (1) Obstruction of the bowels, with the ordinary symptoms of the condition.
- (2) An external tumor in Scarpa's triangle, below Poupart's ligament, beneath the pectineus, and on the inner side of the femoral ring. It is most visible when the limb is extended, and most easily palpable when the muscles are relaxed by flexion and internal rotation. It will, however, be absent when the hernia lies within the canal or between the obturator membranes, or may be difficult to detect even in the complete form if, as rarely happens, the patient is very fat.
- (3) Internal indications of tumor by vaginal or rectal examination.
- (4) Tenderness on firm pressure with the finger-tip in the region of the external opening of the obturator canal may assist diagnosis when there is no palpable tumor.
- (5) Irritation of the obturator nerve commonly

accompanies incarceration as well as strangulation. It is shown chiefly by a neuralgic pain extending along the inner side of the thigh, and even to the knee or lower, and sometimes by a sense of stiffness or cramp in the adductors.

In some instances the characteristic indications localizing the seat of obstruction may all be absent. As a rule, however, an intestinal obstruction of obscure origin in an old and emaciated female should always lead to a careful examination of the external opening of the obturator canal before abdominal section, and an exploration of the internal opening afterwards when laparotomy is performed.

Thirty operations for the relief of strangulation have been recorded, including those now described. Of this number, 16 ended fatally. Laparotomy was performed in five. In the fatal cases 12 deaths were due to the injury to the gut (gangrene perforation) by the strangulation, and could hence scarcely be attributable to the operation.

The method of kelotomy is usually that adopted in the case now reported. It offers no difficulty; and almost the only risk for which the surgeon is likely to be responsible is hemorrhage from a wound of the obturator vessels—a dangerous complication, owing to the difficulties opposed to the arrest of the bleeding by the depth and inaccessibility of the source. The artery usually lies opposite the upper and outer part of the sac, and a section of the constricting band in connection with the external or internal obturator membrane may usually be made with safety in a downward and slightly inward direction. The incision should, however, be as short as possible. It would, perhaps, be safer still to introduce a steel director or some other strong edgeless instrument beneath the neck of the hernial sac and widen the opening by forcible pressure in a downward direction. This would involve no risk, and would probably be sufficient to allow reduction. An attempt at radical cure will, of course, always be made after reduction. It is doubtful whether anything is feasible beyond ligature of the neck of the sac as high as possible. When a kelotomy reveals a gangrenous state of intestine the problem is similar to that offered by the same condition in other hernie. An attempt to excise the gangrenous portion and to suture the two ends may not often be advisable; and probably the best practice, where the patient's condition permits, will be found in a laparotomy and the establishment of a lateral anastomosis between the two portions of the strangulated coil on the abdominal side of the canal. It is hardly necessary to press the advantages of promptitude when operation is found necessary. The mortality is that of delay, not of surgery. Taxis has been successful in a certain number of cases of strangulated obturator hernia, but in the present day this measure would be used with great caution, if at all. Any persevering efforts at reduction by this means would be likely to increase the fatality of the condition.

#### PERFORATING ULCER OF THE STOMACH.

R. F. Weir and E. M. Foote have contributed a valuable paper on this subject, with the report of a successful case treated by laparotomy. A table of all the cases operated upon is appended; careful analysis of the symptoms, prognosis and treatment is given, and the various operations are described.<sup>20</sup>

<sup>18</sup> *Gentl. f. Chir.*, 1896, Bd. xxiii, s. 785.

<sup>19</sup> *Lancet*, April 4, 1896, p. 924.

<sup>20</sup> *Medical News*, April 25, 1896, p. 449.

They state that the application of the operation of gastro-enterostomy for the relief of gastric ulcer, producing repeated hemorrhages, severe and prolonged pain, or obstinate vomiting, while it is attractive in principle and meets well the difficulties of the other operations that have been practised, must be considered to be temporarily in abeyance.

Doyen considers the above symptoms formal indications for operation, and a suggestion of his is noted in the article. It is that of the systematic application of rest to the ulcerated stomach, by means of a gastro-enterostomy, just as an ulceration of the rectum is often well treated by a colostomy, or as a painful bladder is relieved by a suprapubic opening. The results in his own gastro-enterostomies, as well as those of other surgeons, prove that when this artificial pylorus is well established that ulcers quickly heal and hemorrhages cease.

The operation of gastro-enterostomy is yet unsatisfactory in its details. This is acknowledged by surgeons of experience, and is further proven by novel methods for its performance that are evolved at short intervals. The gastro-enteric opening can be readily effected; but the free current of the food, and particularly the bile, to the intestines below is not always safely accomplished, and in this respect the operation is individually felt to be a yet unsolved problem. Should, however, the improvement, suggested by Doyen, be corroborated at the hands of other surgeons, or perhaps even be bettered by them, the employment of the operation of gastro-enterostomy for the relief of the painful and less urgent forms of gastric ulcer would at once enable relief to be given to many, and our art to be notably amplified.

#### TREATMENT OF THE ISOLATED PORTION AFTER ANASTOMOTIC OPERATIONS ON THE INTESTINE.

A. Obalinski, of Krakaw, has recently called attention anew to this subject,<sup>21</sup> and has published an interesting article about it. At first such isolated loops were closed by suturing the ends and returning the section thus closed to the abdomen, but subsequent experience found that accumulated secretion of this shut-up portion so distended it that a rupture was feared, and the method of fixing one or both ends of the abdominal wound has been considered the most satisfactory one. The abundant discharge from the fistula thus formed of a fecal-like fluid often observed in cases thus treated seemed to justify this conclusion. More recently, attempts to restore a closed isolated loop to the abdomen have been successful, and in 1894 both Barocz and Obalinski reported cases where this had been done. It was then noted by Reichel that the successful cases were cases in which the larger intestine had been closed, and he considered this result due to the small amount of secretion from the larger intestine as compared with the small. Another point now appeared in the discussion, as to what influence the presence or absence of disease in the isolated portion would have on the result. Obalinski saw, fourteen months after isolation, the ascending colon contracted to a thin band and without any communication with the patent intestinal tract. Friele reports a case in 1895 where the isolated portion (parts of the transverse colon, the splenic flexures and part of the descending colon) which was the seat of a new growth,

was found at the end of several weeks to contain fifty grammes of a fecal-like secretion.

Obalinski, after a discussion of his data, concludes that from the actual conditions observed in four successful cases that the complete closure of the isolated portion of a healthy large intestine in a justifiable operation, and one to be recommended. If this portion is the seat of disease (cancer, tuberculosis, actinomycosis, ulceration, etc.), the upper end should be sutured into the abdominal wounds and thus left patent. This fistula should subsequently be closed when the amount of discharge had become only slight in amount, as Wiesinger advises. He would only exceptionally isolate a healthy loop of small intestine when he could arrange a certain access to it at the time of operation, so that in case of necessity it could be readily opened.

#### SPLENECTOMY FOR RUPTURE.

Mr. Pitts and Mr. Ballance read papers on "Splenectomy for Rupture" before the Clinical Society of London, and reported three successful cases.<sup>22</sup>

The first case was that of a boy aged ten years who was admitted to St. Thomas' Hospital under the care of Mr. Ballance on September 11, 1895. He had been ill since the early morning with severe pain in the abdomen, and had been sent to the hospital by Mr. White of Camberwell, who said he had internal hemorrhage. Five days previously, while batting at cricket, the boy had been struck by a "full pitched ball" on the left side. After the injury he had been in much pain, but this had passed off until a few hours before admission, when it recurred. On admission he was collapsed and suffering from severe shock; the surface was blanched, the lips pale, the skin cold and clammy, the pulse small and rapid, and the respiration rapid and diaphragmatic. The abdomen was rigid, tender and prominent; there was slight bulging of the flanks; the percussion note was dull in both flanks. On change of position the dullness could be made to disappear entirely from the right but not entirely from the left side. The patient rallied slightly and the operation was proceeded with. A small incision was made below the umbilicus, and on opening the peritoneum a large quantity of fluid blood gushed out. A rupture of the spleen being suspected, a four-inch incision was immediately made in the upper part of the left linea semilunaris, which exposed a large quantity of clot, some of it dark in color and some in part decolorized. This was removed and the spleen brought into view, when it was seen that the latter was severely ruptured on its phrenic and renal surfaces, the injuries extending into the hilum and involving the vessels. The pedicle was ligatured and the spleen cut away. All blood and clot were then carefully removed by sponging and the wounds dressed and closed in the usual way. Convalescence was rapid and satisfactory. At the operation it was noticed that a spleniculus was left behind. The blood was carefully examined while the patient was in the hospital and it was found that the red corpuscles were diminished in number while the white were considerably in excess. The physiological mean was reached in about six weeks. At the present time the boy was in robust health and had gained weight, but the cervical, axillary, and inguinal lymphatic glands were all obviously enlarged.

The second case, that of a woman forty-five years

<sup>21</sup> *Centbl. f. Chir.*, 1896, 809.

<sup>22</sup> *Lancet*, February 22, 1896, p. 484.

of age, was operated upon in exactly the same way as the foregoing case, as was also the third case, that of a man thirty-six years of age — all three cases having recovered.

The authors discussed in detail the diagnosis of ruptured spleen, laying stress especially on the following points: (1) the locality of the injury; (2) the evidence of internal hemorrhage; (3) the great increase of the fixed splenic dulness; and (4) the fact that while both flanks were dull on percussion the right flank alone became entirely resonant on change of position. With reference to the treatment of the injured organ, they urged that in certain cases the hemorrhage might possibly be arrested by some means other than the removal of the organ. The only other similar successful case (Reigner's) on record was then narrated, and the special symptoms produced by the removal of the normal spleen in man and brutes briefly described. Sir Dyce Duckworth stated that the results in splenic leukemia and Hodgkin's disease were by no means encouraging, but those described in the paper were ruptured but otherwise healthy organs. He hoped for a physiological appendix to the paper later giving the after-history of the cases.

#### THE EARLY DIAGNOSIS OF TUBERCULOSIS OF THE KIDNEY.

Meyer, in an article on the above subject,<sup>22</sup> states that as far as he has been able to find in literature, the following observation has not yet been described: On viewing the interior of the bladder the cystoscopist perceives an absolutely healthy surface of the vesical mucous membrane and one perfectly normal ureteral opening. The mouth of the other ureter however, is injected; and a number of circumscribed, clearly defined, inflamed areas of the mucous membrane can be seen between it and the slightly hyperemic trigonum, leaving the interposed tissue unchanged in appearance, and thus one recognizes with marvellous and astonishing clearness the enemy's steps in a hitherto uninvaded field. This picture could not be compared better than to liken it to footprints in the freshly fallen snow. No other disease of bladder or kidney with which the author is acquainted presents a similar cystoscopic appearance. Should the microscope fail after repeated observations to confirm a diagnosis made by the cystoscope, it would be well to inoculate a rabbit by injecting some of the sediment into his pleural or peritoneal cavity, or the diagnostic value of Koch's tuberculin might be tried.

Therefore, in cases of the sudden appearance of the above mentioned symptoms, too much stress cannot be laid upon the necessity of establishing a strictly defined diagnosis as soon as possible, and of carrying out that treatment which alone is the logical sequence of the same, namely, early extirpation of the primarily diseased kidney.

#### RAPID AND EASY METHOD OF TRANSPLANTING THE URETERS INTO THE INTESTINE, WITHOUT SUTURE, BY MEANS OF A SPECIAL ANASTOMOSIS BUTTON.

Dr. Achille Boari has published a description of his button and the technique for its use.<sup>24</sup> Up to this time the objection to the implantation of the ureter in the intestine has been the fear of ascending infection of the kidneys by intestinal micro-organisms. Gior-

dano and Vignoni have each succeeded in keeping dogs alive for some months after transplantation of the ureters to the rectum, and Chaput has transplanted the ureter in the human female to the descending colon with perfect success and no serious after-complications. The patient is in good health — three years after operation. Chaput says: "The passage of the urine into the intestine causes no inconvenience, does not disturb digestion, nor irritate the mucous membrane. It only provokes rather frequent stools, but not oftener than the normal urinations. It is not necessarily followed by either hydronephrosis or pyelonephritis from ascending infection, as my observations show." Two additional successful cases after the use of the button are reported by its inventor, in which the button came away on the eighth and twelfth days respectively. In neither has there been any signs of uremia since the operation.

#### CHANGES IN THE SPINAL CORD FOLLOWING AMPUTATIONS.

At a meeting of the Pathological Section of the Liverpool Medical Institution, Dr. Alfred W. Campbell read a paper on "The Changes of the Spinal Cord following Amputations,"<sup>25</sup> and detailed the changes found in three cases, one being an amputation below the knee, and two being amputations through the upper arm. For purposes of comparison, sections of the spinal cord from a case in which the entire brachial plexus had been injured in early life were shown. In all cases marked changes in the spinal cord were found in those segments which receive the sensory nerves from the skin and give off the motor nerves to the muscles removed. These changes were hemiatrophy, with universal reduction in size of gray and white matter, without definite sclerosis of special tracts, and a numerical deficiency of the nerve cells in the cornua, but especially in the postero-lateral group of the anterior cornu, all on that side corresponding to the amputation. In the case where the leg had been amputated there was a reduction in the number of the nerve cells in Clark's column in the lower dorsal and upper lumbar segment. The peripheral nerves above the site of operation revealed marked atrophic alterations and a filling up of the intervening spaces between bundles by large quantities of fat. The ganglia on the posterior roots presented atrophy of some nerve cells. In the brachial-plexus case the hemiatrophy was not so marked and the posterior cornua were symmetrical, a condition which Dr. Campbell explained might be due to the skin being left intact. Reference was made to Sherrington, Head and Thorburn's work on "Spinal Localization," and the wonderful accuracy of the results of these observers as confirmed by these cases was commented upon. The paper was illustrated by lantern slides.

#### RUPTURE OF THE QUADRICEPS EXTENSOR MUSCLE AND ITS TENDON ABOVE AND BELOW THE PATELLA.

Walker, in an analysis of 255 cases of rupture of the quadriceps extensor muscle and its tendon above and below the patella,<sup>26</sup> notes the following conclusions:

(1) In recent cases where there is not much effusion and the joint is apparently not closed, where the separated ends can be approximated and detained by suitably adjusted pads, the mechanical treatment may

<sup>22</sup> Medical News, March 7, 1896, p. 253.

<sup>24</sup> Il Polliclinico, October, 1895; American Journal of Medical Sciences, April, 1896, p. 481.

<sup>25</sup> Lancet, vol. 1, 1896, p. 718.

<sup>26</sup> American Journal of Medical Sciences, June, 1896, p. 638.

be carefully considered. In the hands of the intelligent general practitioner this method may be expected to bring about a complete recovery in the larger number of cases. From nine to twelve months will be required to re-establish fully the normal functions.

(2) A too prolonged fixation in bed is unfavorable to an early recovery, therefore early massage and passive motion are strongly advised.

(3) The skilled aseptic surgeon who primarily resorts to the operative method in suitable cases (but the age and vitality of each patient must be most carefully considered) may quite reasonably hope to obtain a better result in a larger number of cases and save his patient three to six months' time.

(4) Catgut, kangaroo tendon, or silkworm-gut should be used, and where there is much effusion drainage should also be employed.

(5) When the separation is greater than one and one-half inches, or when the case has not recovered under the mechanical treatment, the operative is indicated.

(6) As the length of time required for treatment is a very important consideration, so the operative method, which has diminished this period and also succeeded in a larger number of cases without increasing the danger, will be more often indicated and more frequently applied in the hands of the skilled surgeon.

#### SYNOVITIS AND SUPPURATIVE ARTHRITIS OCCURRING AS COMPLICATIONS OF ERYSIPELAS.

Gamgee<sup>7</sup> calls attention to the infrequency with which these complications are referred to by most authors of English text-books. He has collected records of 817 cases of erysipelas, among which were 12 (1.46 per cent.) cases of synovitis or suppurative arthritis. Regarding the pathology of these conditions, the author could find but one reference bearing on the former, that of Schuller, who found the streptococcus of erysipelas in a case of erysipelatosus hydrarthrosis. Fehleisen and Hajek hold that the streptococcus erysipelatosus is incapable of causing suppuration, which when it occurs is due, they claim, to the streptococcus pyogenes. On the other hand, a number of observers have found the erysipelas coccus in suppurating inflammation of the joints, which have been produced experimentally, indeed, in animals by injections of pure cultures. The cocci reach the joints by direct extension, when the area of erysipelas is in the vicinity of the affected joint, or by metastasis when the joint lesion occurs at a point remote from the seat of primary infection. The joint complications may arise at any time during the course of the attack of erysipelas. In two cases of synovitis recorded by Boucher, the affection appeared on the twentieth and eighteenth days respectively. In suppurative arthritis the earlier the disease appears the more acute are its symptoms, and unless prompt and energetic treatment be instituted disorganization of the joint will speedily follow, if not even the death of the patient. The prognosis will depend on the same factors as in other cases of suppurative arthritis. The treatment recommended in synovitis is perfect rest of the joint. In suppurative arthritis, free incisions and absolute fixation are advised. Amputation may become necessary.

<sup>7</sup> Birmingham Medical Review, 1895, vol. xxxviii, No. 205; American Journal of Medical Sciences, January, 1896, p. 102.

(To be continued.)

## Reports of Societies.

### CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

J. L. AMES, M.D., SECRETARY.

REGULAR meeting, Wednesday, October 21, 1896, DR. H. F. VICKERY, Chairman *pro tem*.

DR. W. H. PRESCOTT read a paper on

#### ARTERIO-SCLEROSIS.<sup>1</sup>

DR. E. N. WHITTIER: In all transactions, except medical, change of title implies change of ownership; but the physician, with the unselfish disregard of business proprieties characteristic of the profession, changes the titles of his possessions in token of an ownership, broadened, deepened and strengthened. The title arterio-sclerosis has been evolved from a series of continuous and progressive changes, clinical and pathological, in our knowledge of the subject presented for discussion this evening. Atheroma, endarteritis-chronica-deformans, arterio-capillary-fibrosis, arterio-sclerosis have, in the memory of those present, each held sway; but the present title, with its various subdivisions describes the property better than any previous efforts.

The subject of the admirable paper by Dr. Prescott has not yet received the attention a wider knowledge will compel. Vascular questions exceed all others in their importance; the perplexing problems of "expectation of life" find their best solution in the condition of the circulatory apparatus; that a man is "only as old as his arteries," and that "the majority of men find their way out of life through the portal of arterio-sclerosis," seem to me to require no demonstration in order to be accepted. It is consoling to feel, that, although a man through vice or infelicity in method of living, may be old at forty, his more virtuous neighbor may be young at eighty, in spite of the physiological arterio-sclerosis all flesh is heir to.

The subdivisions of arterio-sclerosis most frequently to be dealt with, are the cardio-vascular and the vaso-renal; the latter is seldom recognized apart from an appreciable cardiac accompaniment, causal or resultant.

From a pathological point of view it may be important to determine which of the two conditions, cardiac or renal, is primary; clinically it is often impossible, and from a therapeutic standpoint not essential, for that form of treatment is most salutary which is large in scope as regards the essential lesion and its secondary complications. This arises because we are unfortunate in our relations to this formidable disease, for we are seldom in position to treat the trouble in its early stages, but frequently at so late a period in its progress that remedial measures are ineffectual, and palliatives are our main resource.

There are two periods in this disorder which are pregnant with errors in diagnosis. In the first, there is poverty of symptoms by which localization may be accurately mapped out; in the second, such profusion of rational and physical signs, such evidences of structural changes, cardiac, renal and cerebral, that the underlying and causal relation of the condition of the vascular channels, may be altogether lost sight of in the study of the effects of arterio-sclerosis.

<sup>1</sup> See page 588 of the Journal.



Sphygmographic tracings, as aids in the diagnosis of disorders of the circulatory apparatus, are important; and in all cases where accentuation of the aortic valves points to increased arterial resistance, I feel certain that sphygmograms of the radial will show, in advance of other methods, by a well-defined departure from normal tracings, the degree of sclerosis of the peripheral vessels. Although the sphygmograph is far from being the instrument of precision longed for, more reliance may be placed upon it than upon the stethoscope in determining the method of the heart's action in cases of impending cardiac inefficiency, as well as the influence of treatment designed to delay the progress of that most dreaded result of arterio-cardiac sclerosis.

Departures from normal tracings indicative of cardio-vascular changes associated with arterio-sclerosis are most marked in the systolic part of the sphygmogram; but the diastolic period presents features of wide variance from normal in the behavior of the heart during this portion of the cardiac cycle. I do not remember any tracings of radial sclerosis which did not present evidence of cardiac involvement in the sharp rise, in the lessening of the "primary wave," in the lifting of the "tidal wave," in the lowering of the "aortic notch," and in a flattening of the curves and shortening of the diastolic portion of the tracing.

The paper of the evening is most timely, because of a deepening interest in the subject-matter of diseases of the blood-vessels. Dr. Prescott "rounds up" completely the clinical and pathological facts pertaining to this disorder, and has placed in strong light the salient features of a case such as may at any time come into the care of the general practitioner.

Careful attention to the history of the patient, with particular reference to the etiological influence of the "chronic intoxications" arising from alcohol, syphilis, lead, rheumatism, malaria, etc., will give the largest opportunity for correct treatment during the primary stages, and far in advance of the time when the disease is confessedly unmanageable by reason of the secondary complications — cardiac, vaso-renal or cerebral.

The differential diagnosis of the disease in the early stages is no longer difficult; and recent contributions to our knowledge in this direction have been so large that the complications and secondary phenomena of arterio-sclerosis are far less likely than formerly, to be regarded as primary pathological states of the various viscera involved.

DR. J. L. MORSE: I am inclined to think that, unless our attention is called to it, we hardly realize the frequency of this condition of primary arterio-sclerosis, and do not recognize its importance clinically. I think we are very apt to pass over the early cases even when they have the four cardinal symptoms — increased arterial tension, thickening of the vessel wall, hypertrophy of the left ventricle and accentuation of the aortic second sound. Again, in the later stages of the disease, when the secondary changes in the heart and kidney are developed, we are very likely to overlook the primary disease and call the case cardiac or renal, as the case may be. To see how far I have fallen into the error I have just spoken of, I have had my house-officers look over the cases I have seen in the outpatient department of the City Hospital in the last two years, and find that I have made the diagnosis arterio-sclerosis as the first diagnosis in only 25 cases. I feel sure, however, that I saw many more than that.

Twenty-four of these were men and one a woman. Most of the men were between fifty and seventy; none of them in the thirties. I looked these over to see what were the prominent symptoms, and found, as I expected, that most of them came for dizziness or headache. Twelve came primarily because of dizziness. In some the dizziness was continuous, while others only had dizzy spells. Eight had constant headache and came for that. One complained of insomnia. Three had had typical attacks of angina, and four complained of paresthesia, largely in the legs. It seems to me that these figures suggest rather an important point in diagnosis, and that is, that a middle-aged or old man who complains of dizziness or constant headache is very possibly the subject of arterio-sclerosis.

DR. BOLAND: I would like to ask how the doctor explains the lack of rhythm in the pulses of the two sides.

DR. PRESCOTT: I think that it may be due to spasm of the artery as suggested by Dr. George L. Peabody in Vol. VI of *Transactions of the American Medical Association* (1891).

DR. VICKERY: I presume the doctor looked with a good deal of interest at the lungs after that early history. Pathologists have made such claims as to the number of cases of cured tuberculosis that are found at autopsy that it is interesting in this man who was supposed to have been "in a decline" at the age when phthisis is common that there was nothing to show for it in the thorax. It hardly seems possible but what there would have been some adhesions or scars that could have been interpreted as a former localized process even after this lapse of time. I should like to ask Dr. Prescott what he thinks about that.

DR. PRESCOTT: My explanation of that sickness was that he had an attack of pericarditis which caused the obliteration of the pericardial sac, because the layers of the pericardium had evidently been adherent for a long while.

In reference to the term "ulcer," I would like to say that I used it because it was used in the books, and I agree perfectly with Dr. Whitney's criticism of its use.

In support of what Dr. Morse has said, I would say it was because I believed that arterio-sclerosis was so often overlooked, and that clinicians pay so little attention to the disease that I wrote the paper. Headache has been a very common symptom in the cases I have seen. The removal of the cause before the cases have advanced very far is important in those cases due to chronic poisoning. Dr. Whittier's list of causes is about in accordance with the one which I should make up from what I have seen, except I think syphilis is a primary cause more often in arterio-sclerosis of the brain than any of the other causes.

DR. VICKERY: One other practical point in the paper was that this patient bore his journey well. We often have to decide whether a patient will survive a journey of any sort which is more or less necessary, and yet we hesitate because we should hate to have a death occur in transit. This patient bore his journey with equanimity. Twice this summer I have been placed where it seemed desirable for patients to travel when they were in delicate condition, and I have been struck with the same thing, that with proper care the effort does not seem to be so disastrous as we might beforehand fear. The mental



excitement and interest act as a stimulus to the heart in these cases, and then with the various means of transportation carefully used the strain is not very great.

DR. F. COGGESHALL read a paper on

A CASE OF SYPHILIS OF THE HEART.<sup>2</sup>

DR. WHITNEY: The autopsy of this case was most interesting, both from the lesion found and from the absence of lesions. Owing to the cramped quarters in which the autopsy had to be performed, the head was not opened, a sufficient cause of death having been found in the body. The body was that of a well-built man with the usual signs following death. On opening the thorax the left lung was found adherent throughout, which condition may have dated from the pneumonia in early life, and may have been in part the cause of the pain referred to that region. The lungs were engorged with blood, although there was no evidence of any solidification or infarction. The other organs were in the same condition of general engorgement, the kidneys remarkably hyperemic, and it is very probable that the changes in the urine were simply due to the disturbance of the circulation. The chief interest centred in the heart. It was found very much enlarged. On opening the left ventricle nothing particularly marked was noticed. On opening the right ventricle it was found to be full of clot, much of which was evidently of intracardial origin and quite firmly adherent to the surface of the intraventricular septum. On scraping this away there was seen in that portion of the heart a rounded tumor, which was soft and yellowish in color, and on cutting into it, of a semi-purulent consistency, so much so I thought at first it was an inflammatory condition. At the same time it suggested itself to me that possibly we had one of those rare cases of gumma of which I had read, but of which I had never seen a specimen. On looking into the left ventricle there was a similar condition seen just beneath the aortic valves, projecting as a slight protuberance above the surface of the heart, with more or less necrosis but with no thrombus attached. The consistency was that of firm fibroids with a certain amount of yellow cheesy degeneration more or less diffused throughout the substance. The appearances were a little suggestive of tuberculosis and at once preparations were made to see if tubercle bacilli were present, and a portion was inoculated into a Guinea-pig. But neither the cover-glass nor the subsequent fate of the animal showed evidence of its being of tubercular origin. The microscopical examination showed no miliary tubercles; but simply these areas of fibrous, yellowish, opaque material usually seen in the gummata of other organs of the body, so that by exclusion as well as by the positive appearance the diagnosis of a gumma was settled.

Gumma of the heart is certainly a rare accident of syphilis, and in looking up the subject to a slight extent I find that there were cases recorded the middle of the last century; but I think it is a little problematical as to just what the condition was. Ricord is credited with being the first to accurately describe gumma of the heart in 1845; then Virchow and the other pathologists recognized its occurrence; and this picture from Lebert, done sometime in the 50's gives an illustration of gumma in the heart. A number of men have written on this subject. One rather

interesting case is given by Jürgens. An actress, nineteen years old, complained of palpitation of the heart for eight days only before her death. She had lived in the same house for a year, and the landlady said she had never been sick during that time, and always had looked very well. She died so suddenly that it was a question if it might not have been suicide. There was nothing to be seen on the external surface of the body that suggested syphilis. The brain was intact. Both lungs were very edematous. Slight edema of the glottis. The heart was very much enlarged, especially on the right side; and in the wall of the right ventricle there were a number of elevations above the surface, which went down deeply into the muscular substance. They were in many places of an opaque, yellowish color, disseminated through dense fibrous tissue, and were evidently the gumma of syphilis. In this case in the right kidney were a number of scars showing evidence of former trouble. There were no scars upon the genitals. The illustration shows very well the extensive infiltration of the heart wall with the gummatous material; and yet this patient, until within eight days of her death, had no symptoms which called attention to her condition.

The most extensive work on this subject is one published in the "Archives for Dermatology and Syphilis," on "Syphilis of the Heart in Late and Hereditary Forms," by Marachek. He has collected about 115 cases of syphilis of the heart, and gone into the subject extensively. The illustrations are very good.

Syphilis of the heart appears in two forms, either in the nodular or gummatous form, such as we have in the case Dr. Coggeshall has reported, or in the form of diffuse fibrous thickening, which is more like that which accompanies arterio-sclerosis, and is due to syphilitic disease of the vessels (syphilitic endarteritis). The rarity of the affection may be judged, perhaps from the fact that in 100,000 autopsies in Vienna gone over by Marachek, he was able to find but six cases of syphilitic disease of the heart.

DR. VICKERY: I would like to express my interest in this case and the admiration for the way in which it has been reported. I never have seen a case of syphilis of the heart that I know of, and I believe the condition to be very rare. It has been stated that the gummata in the wall of the heart are apt to harden and not to liquefy, which I think is fortunate. The prognosis I understand to be very unfavorable, even if the diagnosis can be made. I should think the history illustrated the extreme advantage of a prophylactic mode of life.

DR. PRESCOTT: I have never seen a case of syphilis of the heart, but I once saw a specimen (which in many ways resembled this) which was a case of echinococcus of the septum of the heart, where the appearance of the swelling before it was cut open was similar to the appearance in this case, being about the same size and color; but, of course, when a cut into it was made the nature of the trouble was found out. The wall of the cyst was very thick giving it an appearance of fibrous thickening. In that case the patient died suddenly, having been perfectly well and never having had any symptoms.

DR. WHITNEY: As regards the seat of the lesion in the intraventricular septum, we do not know so much about the relation of the nerves of the heart; but I think, as far as is known, that the great ganglia, or those that preside most over the action of the heart,

<sup>2</sup> See page 561 of the Journal.

are in the intraventricular surface rather than on the walls, so that a lesion would be more apt to produce disturbance of the heart there than in the wall of the ventricles. For instance, in the case of Jürgens, most of the gummata were in the wall of the ventricle and not in the ventricle; and although that patient died suddenly, there was not a great deal of heart disturbance until a short period before death. Whether this location in the ventricles will be borne out by future observations remains to be seen.

#### AMERICAN PUBLIC HEALTH ASSOCIATION.

TWENTY-FOURTH ANNUAL MEETING, BUFFALO, N. Y.,  
SEPTEMBER 15-18, 1896.

##### FIRST DAY. — MORNING SESSION.

THE Association assembled in Ellicott Square, and its deliberations were presided over by DR. EDUARDO LICEAGA, of Mexico, President of the Superior Board of Health of that city.

DR. STEPHEN SMITH, of New York, the first President of the Association, was introduced, and made a few remarks with reference to the progress the Association has made from its beginning.

DR. ERNEST WENDE, Commissioner of Health, of Buffalo, cordially welcomed the Association in behalf of the local committee of arrangements.

##### REPORT OF THE COMMITTEE ON CAR SANITATION.

This was read by DR. C. O. PRØBST, in the absence of DR. G. P. CONN, of Concord, Chairman. The report states that any one who takes an interest in car sanitation will soon become convinced that there is something lacking in the manner in which cars are cleansed and kept in condition for the travelling public. In caring for these conditions, ignorant and untrained help may and do destroy a great deal that should be cared for, and thus the expenses of this department are far beyond what is actually necessary.

##### OBSERVATIONS ON THE CLEANING OF RAILROAD PASSENGER-CARS.

DR. DOMINGO ORVANANOS, of the City of Mexico, read a paper with the above title.

To afford any security against contagion or infection from railroad cars, it is necessary that the cleansing operations shall be carried out several times a day. To attain these objects, the author thinks passenger-cars ought to be constructed in a very different manner from their present style. The bed-clothing, including the blankets and curtains, should be changed daily, as well as the mattresses.

##### POSSIBILITIES OF CONTAGION FROM VENEREAL DISEASES IN RAILWAY CARS.

This paper was read by DR. TOMAS NORIEGA, of the State of Chiapas, Mexico, in which he cited the case of a married man, thirty years of age, who arose from his berth and, as was his custom, washed his face in the lavatory of a Pullman car. Two days thereafter he felt the first symptoms of purulent ophthalmia, for which he consulted a physician. The patient was treated energetically, but in spite of all efforts the right eye was lost. Other similar cases were reported.

DR. FREDERICK MONTIZAMBERT, of Montreal, General Superintendent of the Quarantines of the Dominion of Canada, presented the

#### REPORT OF THE COMMITTEE ON STEAMBOAT AND STEAMSHIP SANITATION.

##### FIRST DAY. — AFTERNOON SESSION.

##### A paper on the

##### INFECTIOUSNESS OF MILK

was read by DR. JAMES F. KENNEDY, of Des Moines, Iowa.

Cows' milk alone was considered, since no other kind of milk is used by many infants and adults, and since it is the almost universal, and, under proper conditions, the best substitute for human milk in the feeding of children. In Berlin, in giving the certificates of death of children under one year, the fact must be stated as to whether the child was fed from the breast or brought up artificially. In 10,000 deaths thus reported, it was found that two-thirds, or 7,646 were artificially fed. The author emphasized the importance of a sanitary inspection in addition to, if not to the exclusion of, the mere commercial examination.

##### REPORT OF THE COMMITTEE ON ANIMAL DISEASES AND ANIMAL FOOD.

This was read by the Chairman, DR. D. E. SALMON, of Washington, D. C.

Animal diseases are now more intelligently managed by sanitary officers than ever before, and the meat inspection service has been steadily extended and perfected. Outbreaks of anthrax among the domesticated animals were apparently becoming more frequent. The contagion once introduced into a pasture remains indefinitely. A disease so fatal to man and beast should be promptly repressed whenever it makes its appearance, and precautions observed to prevent infection of new territory. The report then dwells on the widespread prevalence of tuberculosis among dairy cattle.

Measures for the eradication of this disease have been undertaken by a few States and by a considerable number of cities.

DR. FRANCISCO DE P. BERNALDEZ, of Mexico, contributed a paper on the

##### STUDY OF THE PATHOGENY, ETIOLOGY AND PROPHYLAXIS OF TYPHUS.

This disease arises from a microbe not as yet discovered. Throughout all the districts, which are called the hot country in the Mexican Republic, the infection of typhus does not exist, whilst in temperate climates, at a higher elevation, it predominates in endemic form.

##### REPORT OF THE COMMITTEE ON NOMENCLATURE AND FORMS OF STATISTICS,

by DR. SAMUEL W. ABBOTT, of Wakefield, Mass., Chairman.

The report dealt with the need of a uniform system of classification and nomenclature. Before advising the general acceptance of any one system for general use, the Committee recommended that the Association collect and compare the systems now in use and employed by the different national, state and municipal authorities in this country, in order that these may also be compared with the systems now in use in other countries, so that a general system can be recommended for adoption throughout the states and countries within the bounds of the Association.

DR. EDUARDO LICEAGA, the President, read a paper on

#### THE NOMENCLATURE OF DISEASES AND FORMS OF STATISTICS.

The Board of Health of Mexico City had from the year 1879 up to the year 1887, classified the diseases resulting in death in a certain number of groups. From the year 1888 he, as President of the Board, proposed the adoption of the provisional nomenclature adopted by the Royal College of Surgeons of London. This nomenclature was adopted, because it was the one then followed by almost all the English-speaking nations, and in order that tables of mortality might be compared with those of such nations.

#### ON THE NEED OF UNIFORMITY IN THE MEANING OF THE TERM "STILL-BORN,"

by DR. JESUS E. MONJARAS, of San Luis Potosi, Mexico.

The laws of different countries were cited by the author, after which he proposed the following:

(1) That there shall be included under the term "still-born," all children of more than six months of intra-uterine life that are born dead.

(2) That there be added to the nomenclature of the causes of death the term that shall represent all children that die within seventy-two hours after birth without known cause, and that they be designated by the term "died at birth without known cause."

(3) That the Committee on Nomenclature of Diseases and Forms of Statistics be authorized to recommend this modification of the existing nomenclature in all the countries of the American continent.

(4) That these modifications once adopted in said continent, the same would doubtless be accepted in Europe and elsewhere.

#### DENGUE.

A paper on this subject was read by DR. HENRY D. HORLBECK, of Charleston, S. C.

The disease was defined; after which the author said the object of the paper was to put on record a brief account of a widespread outbreak of this malady which occurred in Charleston in 1895. Commencing in July and lasting until November, it is estimated that 50,000 of the inhabitants were afflicted with the disease. Men and women, seventy years of age, and infants, had it, and yet the malady was not prevalent a few miles distant. Notwithstanding the suddenness of the onset and severity of the attack, death was rare.

#### MUNICIPAL RESPONSIBILITY FOR HEALTHY SCHOOL-HOUSES.

MRS. ELLEN H. RICHARDS, of Boston, contributed a paper on this subject.

Local agitation of this question might do some good; but to the author it seemed as if the time had come for some concerted action compelling city authorities to keep school-houses in good condition. A most efficient way would be to bring to bear the power of the law, and to insist that such buildings as are flagrant violations of the law shall be closed as private buildings would be.

#### FIRST DAY. — EVENING SESSION.

Addresses were delivered by the Mayor of Buffalo and the REV. THOMAS SLICER, both of whom spoke of the

#### BENEFITS OF SANITATION.

The President, DR. LICEAGA, then delivered the ANNUAL ADDRESS.

He first thanked the members for the distinguished honor conferred upon him, after which he said that the preservation of health, the prolongation of life, and the physical improvement of the human race were the ideal principles that ought to be kept in view.

Coming to the question of epidemics, President Liceaga states that they can be suppressed at their inception by isolating the first patients and disinfecting the objects which they have contaminated, whether these objects be the clothes they have used, the furniture found in their respective rooms, or the rooms in which they were kept during the disease. Isolation in cases of diphtheria must be absolute and complete.

A proposition which demanded special study was the technique of disinfection.

Lastly, the speaker cited examples to show the advisability of organizing a committee to study the periods during which each contagious disease is transmissible and the time during which every patient who has suffered from such disease is dangerous to the community.

#### SECOND DAY. — MORNING SESSION.

#### REPORT OF THE COMMITTEE ON THE DISPOSAL OF GARBAGE AND REFUSE.

This was presented by MR. RUDOLPH HERING, C. E., of New York City, Chairman, and was followed by a paper entitled

#### DISPOSAL OF THE GARBAGE AND WASTE OF THE HOUSEHOLD,

by COL. W. F. MORSE of the same city.

In considering the matter of the final disposition of garbage, the author said that no record of methods could be complete unless those means were considered by which the waste of the family was destroyed in the home where it was produced. An apparatus in the form of a carbonizer for the disposal of garbage was described.

DR. N. E. WORDIN, of Bridgeport, Conn., read a paper entitled

#### A PLEA FOR THE DOMESTIC DISPOSAL OF GARBAGE.

Fire is the best destroyer. It leaves no filth and no germs behind. The different methods of disposing of garbage were tabulated as follows: (1) the most wasteful — sea disposal; (2) the most offensive — hog feeding or fertilization; (3) the most economical to operate — reduction; (4) the most sanitary and complete — cremation. Reduction and cremation were the only methods worthy of consideration for any city.

DR. WM. S. TREMAINE, of Buffalo, explained the results of practical experiments with one of the garbage crematories in Buffalo. This crematory successfully disposes of garbage and excrement without any odor.

#### REPORT OF THE COMMITTEE ON TRANSPORTATION AND DISPOSAL OF THE DEAD,

by the Chairman, DR. CHARLES O. PROBST, of Columbus, O.

The Committee is of the opinion that it is quite possible to so prepare a body dead of infectious disease

with promptitude and but little expense as to make it transportable without any danger of transmitting infection, and it is the duty of the Association to develop the simplest methods by which this desirable end could be obtained, in order that the sentiment of respect for the dead might be maintained without any danger to the living. If, however, all dead bodies are to be allowed transportation, it would be necessary to provide that the preparation of bodies, where death resulted from a contagious disease shall in each instance be under the direct supervision of the health authorities.

#### THE QUICK OR THE DEAD.

DR. BENJAMIN LEE, of Philadelphia, read a paper with this caption. Health authorities should be very slow in relaxing any of the precautions and restrictions at present in force attending the transportation of those dead of contagious diseases. He thinks the true solution to the question of transportation is to be found in the cremation of all bodies dead of contagious diseases.

ON MEASURES FOR THE PREVENTION OF BLINDNESS, by DR. AUGUSTIN CHACON, of the City of Mexico.

Statistics, cited by the author, prove that a great deal more than half of the cases of blindness might very probably have been avoided, if proper measures had been taken in time. The two diseases of the eye which cause the loss of sight in the largest number of patients were atrophy of the optic nerve and purulent ophthalmia. These two diseases were considered at length. Special attention ought also to be given to hygiene of the sight in schools.

DR. ALBERTO G. NORIEGA, of Mexico, read a paper on

#### MIASMATIC FEVERS IN THE STATE OF SONORA.

The author spoke of the origin, treatment, and some of the peculiarities of the symptomatic characteristics of fevers from miasmatic origin in this State. He proposed the following prophylactic measures:

(1) The planting of thick woods around the township with the idea of suppressing the paludic miasma where the trees grow.

(2) The houses ought to be built on the highest places in order to keep them as far as possible out of the reach of the gases from the pools and marshes.

(3) The front of the houses must not face the direction of the dominant wind, and the houses themselves ought not to be in the way of the winds coming from the pools.

(4) To avoid the watering of the floors in order to maintain the interior of the houses as dry as possible.

(5) The workmen in the fields must not commence their work until the sun is way up, and they must retire from the fields before the sun sets.

#### SUMMARY OF SANITARY LEGISLATION IN THE STATE OF MEXICO.

This paper was read by DR. M. ALVAREZ, of Mexico.

The author said that the philosophy of sanitary legislation rested on three bases: (1) those which attempt to endow the individual with good health, (2) those which take precautions against diseases of all kinds, (3) those which require the partial sacrifice of individual liberty in favor of the general community.

The author then entered exhaustively into drinking-

waters, vaccination, and vaccination laws, paying particular attention to the obligatory vaccination law of Mexico.

#### SECOND DAY. — AFTERNOON SESSION.

DR. A. WALTER SUITER, of Herkimer, N. Y., read a paper entitled

#### OBITER DICTA CONCERNING SANITARY ORGANIZATION.

He said a system of health administration without effective organization was like a ship without a rudder, subject to the mercy of every pestilential storm. Dr. Suiter made a strong plea for an arrangement so systematized that sanitary direction may be administered in the most practical and advantageous manner without conflict of authority. The public should be educated to a point of proper appreciation of the importance of the service required.

DR. U. O. B. WINGATE, of Milwaukee, Wis., read a paper entitled

#### SOME THOUGHTS RELATIVE TO SANITARY LEGISLATION.

The author believes that laws pertaining to sanitation should differ very materially from other laws inasmuch as they voice a scientific fact, and if applicable in one locality, they should be also applicable in all localities. Attention was directed to the great need of a system of statistics, not only pertaining to births and deaths, but to sickness, or the prevalence especially of contagious and preventable diseases. A strong plea was made for a department of public health at Washington.

In a paper entitled

#### THE SANITARY ADMINISTRATION OF UNINCORPORATED DISTRICTS,

DR. HENRY MITCHELL, of Trenton, N. J., presented the following propositions:

(1) By law, provide that in each township or other local political division outside of municipalities, the sanitary authority should be exercised by one official.

(2) The local health-officers should be selected under civil service rules, and their term of office should be five years.

(3) The examination of applicants for the office of township health-officer should be conducted by the State Board of Health.

(4) The appointment of the health-officer in each township should be made by the governing body of the district from an eligible list to be furnished by the State Board of Health.

(5) No health officer should be removed except for cause, and vacancies should be filled for the unexpired term in the manner provided for original appointments.

(6) Local health officers should be required to conduct all of their official operations in accordance with rules and regulations approved by the State Board of Health, and they should also make weekly reports of their doings to said board, and annually to the local governing body.

(7) The local health officer should be paid for his services by the local governing body.

(8) All suits for the violation of any local sanitary rule, regulation or ordinance, should be brought at the instance of the local health officers, and they should be prosecuted by the district attorney, or prosecutor

for the county, but no such suit should be begun until the necessity for its being instituted has first been agreed to by the State Board of Health.

REPORT OF THE INTERNATIONAL COMMITTEE ON THE PREVENTION OF THE SPREAD OF YELLOW FEVER,

by the Chairman, DR. FELIX FORMENTO, of New Orleans.

Regarding this disease, the recommendations of the Committee we give herewith :

(1) Extreme measures of local sanitation in yellow fever foci. Modification of the soil, improvement of harbors, etc., by all means known to sanitary engineering.

(2) Putting in perfect sanitary condition all home seaports and towns most exposed to infection.

(3) A rigid and efficient system of quarantine against the introduction of the disease.

(4) Abolishing forever the abominable system of interment and disinterment practised in Spanish-American countries.

(5) Wherever practicable, yellow-fever hospitals should be established beyond or above yellow-fever foci. When this cannot be done, these hospitals should be established at a distance from centres of population, in a desirable locality and perfectly isolated.

(6) Compulsory cremation of all bodies of persons who have died of that disease and incineration of all infected material.

THE STUDY OF YELLOW FEVER FROM A MEDICO-GEOGRAPHICAL POINT OF VIEW,

by the President, DR. LICEAGA.

This was the fourth paper he had presented on this subject, and his object was to enable the Association to realize the true situation of the Mexican Republic as regards yellow fever. With the aid of facts, he dissipated the erroneous idea which for so many years had existed, that it was a country in which this disease was always found throughout the entire extent of its territory.

DR. G. MENDIZABAL, of Orizaba, Mexico, followed with a paper entitled

A CONTRIBUTION TO THE STUDY OF YELLOW FEVER IN RELATION TO EPIDEMICS IN CORDOVA.

The author presented a *résumé* of the number, intensity, duration and mortality of each of the epidemics of yellow fever which had desolated during three centuries the above mentioned city. This city, besides its climate and soil, its constant humidity, its proximity to Vera Cruz, and many other causes which favor the propagation of the morbid germs, has a great scarcity of potable water of the requisite purity. It is the duty of the municipal authorities to improve the hygienic conditions of the people of this city, to provide them with potable water, to make the soil sterile to the germs of the disease, and thus forever close the doors against this desolating plague.

DR. JOHN L. LEAL, of Paterson, N. J., read a paper on

ISOLATION HOSPITALS,

in which he spoke of their utility in the restriction of preventable diseases, and illustrated his remarks by views and plans of the Paterson Isolation Hospital.

(To be continued.)

## Recent Literature.

*Humane Society of the Commonwealth of Massachusetts.* Report for 1895 and 1896. Boston. 1896.

This report, which covers the one hundred and tenth and one hundred and eleventh years of the existence of the Humane Society of the Commonwealth of Massachusetts, is of more than usual interest. In March, 1895, two of the trustees of the Society, Drs. J. Collins Warren and Geo. B. Shattuck, were appointed a special committee to consider the best method of resuscitation of persons apparently drowned. A year later the committee reported, and their report is included in these pages. This report is a thorough investigation into the methods of resuscitating the apparently drowned which have been advocated or used in the past; and rules are also given for the practical application of the best present method, which the report holds to be Silvester's where there is only one operator, and a combination of Silvester's and Howard's methods where there are two persons working together. The rules for resuscitation are illustrated by cuts, and the report is supplemented by a careful bibliography.

Between the same covers we find, in addition to other matter, some instructions for saving drowning persons by swimming to their relief, and also a reproduction of the proper method to be adopted in rescuing drowning persons by swimming to their relief, taken with permission from "Swimming and Life Saving" by Capt. W. D. Andrews, R.H.S.

We understand that the Massachusetts Humane Society has arranged to have instruction in resuscitation given to the classes in the Boston public schools and hopes to extend this instruction in some measure to the frequenters of the public baths.

*Epidemic Ophthalmia: Its Symptoms, Diagnosis, and Management.* With papers upon allied subjects. BY SYDNEY STEPHENSON, M.B., F.R.C.S. Ed., Surgeon of the Ophthalmic School, Hanwell, W. Pp. 278, with one colored plate. Edinburgh & London: Young J. Pentland. New York: Macmillan & Co. 1896.

The title to this book is unfortunate, for it not only perpetuates an old-fashioned name which has no scientific or anatomical reason for existence, but does not at all convey the scope of the book, as the book does not relate to an ophthalmia but to a whole series of ophthalmias, namely, gonorrheal, diphtheritic, trachomatous, follicular and acute catarrhal conjunctivitis. A much more accurately descriptive title would have been "Contagious Conjunctivitis."

The writer has evidently been called into activity in this particular direction by this appointment as surgeon to the Ophthalmic School, Hanwell, W. Of the methods and purposes of this school we have incidental glimpses, which are only aggravating to a reader on this side of the Atlantic, where such schools are unknown. We gather, however, these facts: The school has been in operation for five years, and every kind of contagious conjunctivitis is admitted. It has had during its existence sixteen teachers and sixty-five nurses, no one of whom has contracted any conjunctival disease, and neither has any ward-maid nor servant about the house. The experience of this school shows that 91 per cent. of the patients admitted can

attend school regularly provided at the same time the treatment of the eyes be persevered in. The disease is thus rendered quiescent, with the result that education and medical treatment are enabled to go on side by side. At the ophthalmic school patients receive twenty-three hours schooling a week. Surely this is better than shutting such children up in hospitals, or worse yet, allowing them to attend ordinary schools and infect the other scholars.

A physician in charge of the pupils of such a school ought to learn something about trachoma; and the most interesting chapters of the book are devoted to this disease. In the first place, our author draws a sharp line between folliculosis and follicular conjunctivitis, on the one hand, and trachoma, or granular conjunctivitis, on the other. The difference is based upon the clinical histories of the two diseases, follicular disease having oval or rounded transparent bodies, the diameter of which seldom or never exceeds one or one and a half millimetres. These bodies often possess a faint yellowish hue, and are usually arranged in rows. Their tendency is to remain discrete, and they are always larger and better marked in the inferior cul-de-sac than elsewhere. These bodies are seldom associated with structural change in the conjunctiva, or papillary hypertrophy; the tarsus is never implicated; and they have an innate tendency to spontaneous disappearance without scar changes of conjunctiva, or corneal complication, or subsequent entropion, and are not contagious. The reverse of this picture is true in trachoma; the cornea and conjunctiva suffer much from the progress of the disease, and finally the lids turn in and trichiasis and pannus tell the story of a destructive process.

For diagnostic purposes our author describes the sago-grain appearance as "round, opaque, ill-defined bodies of a grayish-white color and an extreme friability." Their diameter may reach two millimetres or more. Their tendency is to become confluent, and they are always larger and more numerous in the upper retro-tarsal fold than elsewhere. This distinction, it seems to us, cannot be too often or too strongly insisted on, and the diagnostic value of the location and appearance of the first rounded bodies, as described above, has been persistently taught in Boston for years.

This book impresses the fact that one of these appearances is an almost absolutely harmless condition, and the other a grave, contagious, destructive disease. The sooner the physicians, teachers, school-boards and the inspectors of immigrants in this country learn this fact, the quicker will be the diminution of the proportion of blind paupers to be supported by the State.

The chapter on the treatment of trachoma gives an historical résumé of all methods of treatment, and our author favors surgical interference in all acute cases, to hasten cure. He describes an operation of his own for excising the retro-tarsal fold, and speaks approvingly of the modern methods of expressing the contents of the follicles; but curiously enough he omits any mention of the immediate application of antiseptics after the operation, as is almost universally done in this country. Such an application would seem to be essential when you have just liberated, in all probability, thousands of the germs of the disease all in an active stage and ready to infect fresh follicles wherever they may be carried in the conjunctival cul-de-sac by the tears and bleeding.

There is also a chapter upon pannus and ulcers of the cornea, carefully written, and in which the treatment given is much to be commended.

The last chapter is upon the conditions of the lids resulting from trachoma, with a description and operations for its relief.

The book has an appendix relating to lavatory arrangements in institutions, with pictures of those in use in various schools in London. Upon the whole, it is a book well worth reading, and has much in it to justify its existence.

*Traité de Chirurgie Cérébrale.* Par A. BROCA, Chirurgien des Hopiteaux de Paris, etc., et P. MAUREAC, Ancien Procureur à la Faculté de Médecine de Bordeaux. Pp. 586, 72 figures dans le text. Paris: Masson et Cie., éditeurs. 1896.

This work appears to be an extensive and thoroughly written treatise of cerebral surgery.

Part I approximately one quarter of the volume, is devoted to cerebral anatomy, cerebral topography, localization, clinical symptoms indicating operation, operative technique, and finally a discussion of the dangers attending surgical procedures. A somewhat extensive bibliography is appended.

Part II treats of special work. After considering Horsley's classification of the special intracranial lesions which require surgical interference, the authors have discussed the subject under the following chapters: Traumatic lesions; Sequelæ of suppurative otitis media; Tumors; Cerebral lesions, including hemorrhage, acute and subacute meningitis, abscesses and general paralysis; Hydrocephalus; Microcephalus and idiocy; Functional affections (*a*, epilepsy; *b* psychosis; *c* cephalalgia); Encephalocele.

The book is well arranged, and is not limited to the author's personal experience or opinions. The work of other surgeons whose names are conspicuously associated with cerebral surgery is liberally quoted from. Abundant foot-notes and references show the authority for the facts presented. It is always gratifying to a reader to know the origin of statements presented, which knowledge aids him to estimate their true value. The illustrations are well chosen, and are of valuable assistance as explanatory of the text. The book is one which surgeons and neurologists will read with interest.

*Obstetric Accidents, Emergencies, and Operations.* By L. CH. BOISLINIÈRE, A.M., M.D., LL.D., Late Emeritus Professor of Obstetrics in the St. Louis Medical College, etc. Profusely illustrated. Philadelphia: W. B. Saunders. 1896.

The author truthfully remarks that "this book is not a treatise on midwifery nor a manual of obstetrics, of which there are excellent ones already written." He says, "it is intended for the use of the practitioner who when away from home has not the opportunity of consulting a library or of calling a friend in consultation." It seems rather a large book for the obstetric bag; and short cuts to learning to be crammed up at the last minute are not always the best. The author quotes freely from French authorities, "because," he says, "the art and science of midwifery originated in France, where they still hold a pre-eminent rank."

The book is an interesting one; but there are many points that might be criticised. For example, his treatment of inevitable abortion is that of times

past. "Wait for bad symptoms. . . . Continue the tamponing and ergot. . . . If there is putrefaction of the placenta, which can be recognized by the execrable odor, with chills, fever and tympanites, then hesitate no longer and extract the secundines." He even advises laminaria tents under these circumstances.

The illustrations are of the first order, as will be readily understood, when it is seen that nearly all of them are from the "American Text-book of Obstetrics."

**Manual of Midwifery.** For the use of Students and Practitioners. By W. E. FOTHERGILL, M.A., B.Sc., M.D., C.M., Buchanan Scholar in Midwifery, University of Edinburgh, etc. With double colored plate and 69 illustrations in the text. New York: The Macmillan Company. 1896.

The special activity of the Edinburgh school in the field of obstetrics, both in the past and at the present day, is well known. The aim of the author, as stated in the preface, is to include in a brief but systematic re-statement of the science and art of midwifery as many of these facts and theories as could be compressed into one small volume. In this he has certainly succeeded; for in a book of 483 pages he presents the whole subject in a very compact and systematic, but at the same time in a very readable form.

The modern subjects of ectopic gestation, and the study of frozen sections with reference to the mechanism of labor, are thoroughly discussed. Much credit is given to Professor Simpson for his encouragement and advice.

The systematic arrangement of the subjects, and particularly the admirable summary, deserve much praise. The book abounds in good practical hints.

**Consumption; its Nature, Causes and Prevention.** With an Outline of the Principles of Treatment, for all Classes of Readers. By EDWARD PLAYTER, M.D. Toronto: William Briggs. 1895.

While recognizing the bacillus as an essential cause in consumption, Dr. Playter says that it can act only in a special condition of the human body — in what is called a suitable soil. This seems to be invariably furnished by persons with a defective breathing function, either the result of hereditary malformation or acquired by transgression of hygienic and sanitary laws. He by no means overlooks the necessity of a proper disposal of the sputum, but prevention "will be attained by keeping in mind, rather than the bacillus, the thousands of defective human bodies which provide the condition for its growth therein." Individual effort should therefore be directed to the attainment of the best possible health, while legislative enactments should be aimed toward the better instruction of the people in special preventive measures: the prevention of air-fouling in every form, the establishment of free baths, the drainage of retentive damp soil, the inspection of butcher's meat and dairy products, the inspection and oversight of schools, the oversight of certain cases of the disease, and the hygiene of domestic animals.

The book commends itself for the common-sense view which it takes of a subject which we have been too much accustomed to see treated from an extreme alarmist standpoint, and is one of the best of a large number of monographs with similar titles, written for all classes of readers, which have recently appeared.

## THE BOSTON Medical and Surgical Journal.

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### TRAUMATIC NEUROSES.

STRÜMPPELL's fame as a clinician and pathologist has been so great and his previous work on the various traumatic nervous affections has been of such value that his recent article upon the subject, analyzed a few months ago in these columns,<sup>1</sup> from its complete change of front came in the nature of a surprise. Certain of his conclusions, indeed, although often pronounced, had usually been considered the opinions of a tyro rather than of an experienced neurologist. The fires of controversy upon the subject in Germany had gradually been dying out since the Berlin discussion of 1890, but since the appearance of Strümpell's paper they have blazed up again. Oppenheim, with his accustomed zeal, has attacked Strümpell's conclusions in another monograph,<sup>2</sup> and two important discussions at Hamburg<sup>3</sup> and at Frankfort-on-the-Main<sup>4</sup> have not only rethatched the old straw, but have brought forward several new and important facts.

In all these discussions there seems to be a pretty general agreement that the term "traumatic neurosis" is too indefinite, and that it would be far better to differentiate as accurately as possible the various affections now included under this head. Hysteria and neurasthenia are already pretty well defined. In many cases there are probably structural organic changes in the central nervous system, according to Jessen, Sänger, Rumpf and Nonne, who maintained such opinions at the discussion at Hamburg. Rumpf, moreover, maintained that the concept of hysteria has been extended to cover a much wider field than is justifiable. He differentiates conditions of *comotio cerebri et spinalis*, often associated with symptoms of severe organic disease, such as spastic paralysis and disturbances of speech. The pathological changes, basing his opinions on Schmaus's experiments, he thinks are probably small hemorrhages, disturbances

<sup>1</sup> See this Journal, cxxxiv, 297, March 19, 1896.

<sup>2</sup> Der Fall N., Berlin, 1896.

<sup>3</sup> Neurologisches Centralblatt, xv, 509, 617, June 15, July 1, 1896.

<sup>4</sup> Loc cit., xv, 268, October 15, 1896.



of nutrition in the central nervous system, degenerative processes, gliosis, syringomyelia, or serious disease of the vertebræ. Nonne puts in one class the cases with severe headache and vertigo, without other objective signs, which may be due to direct violence to the head. These cases are more apt to make a good recovery. He cited several cases of "spastic tremor neurosis," due to a blow on the head or back, where there was a marked intention tremor of the legs, with contraction of the muscles, which stood out very prominently, and marked impairment of gait and station. There was slight anesthesia but no other objective signs. The knee-jerks were unaffected, and there were no hysterical or psychical anomalies. All five of his cases were thought to be simulants, but none of them improved, and one, after receiving a full annuity, committed suicide. Fürstner, at Frankfort, while supporting Strümpell's views in the main, also differentiates certain types which are between functional and organic in their nature; in one type analogous to Nonne's cases, there is a pseudo-spastic paresis with tremor, which is not of psychical origin; in a second type, which follows severe concussion, there are changes in the intellectual power, loss of memory, slowness of ideation, attacks of various sorts, inequality of the pupils, and tremor of the tongue; instead of terminating in paralysis, however, the symptoms improve; the third type follows severe concussion of the vertebral column, and is attended by severe symptoms, disturbances of sensibility and of the sphincters, which are usually chronic.

With regard to the important question of the frequency of simulation, nearly all the disputants, Jessen, Sänger, Rumpf, Nonne and Kümmell, at Hamburg, Oppenheim in his monograph, and even Fürstner and Mendel, at Frankfort, agree that deliberate simulation is rare. Jessen goes further in the statement that even exaggeration of symptoms is less common than is claimed, and Rumpf maintains that we much oftener find injured persons, wholly or partly incapable of earning their living, who receive no damages, than we find simulators. Nonne's cases referred to above, and three cases cited by Rumpf, where alleged simulators finally committed suicide on account of their sufferings, confirm the truth of the belief that simulation is rare. Fürstner, almost alone among the disputants, holds that it is hard to determine whether the trouble be real or simulated, because we have to estimate the trustworthiness of the persons whose material interests are involved, to justify their subjective complaints, and to control their instinctive exaggeration.

Strümpell's claim that in many cases the trouble is due solely to suggestion and not to the physical injury naturally awakened much discussion. The German law, passed some years ago, gives the injured laborer an annuity varying with the amount of his disability during the period of his incapacity, instead of a definite sum as "damages." Mendel claims that for a period of ten years before this law was passed he

never saw the results which now are seen as the result of even slight injuries, and that, by the suggestion of compensation, the law has created a new type of disease, real and not simulated. Fürstner holds that this law creates injurious factors and prevents recovery by taking away the stimulus of the necessity for work. Sänger stated that in thirty-four cases of actual injury, where claims were assured at the beginning, the symptoms of traumatic neuroses did not develop. Mendel, furthermore, urges that elaborate examinations strengthen hysterical symptoms, that anesthesia and contracted visual fields may be due to the esthesiometer and perimeter, and that we should examine only sufficiently to establish the diagnosis. Lenhartz, Wilmans and Fürstner, beside ascribing harm to the law, claim that many symptoms and the unfavorable course, may be due to suggestion or defective mental treatment unconsciously exerted by the physician, who takes a pessimistic view of the future and excites symptoms by searching for them. Rumpf goes even further and claims that in half the cases of so-called "traumatic neurosis" the trauma was not the cause, but that it merely called attention to pre-existing troubles. Jessen admits that the psychical effect of an accident may cause the trouble but that it may also do so when the factor of compensation is eliminated. Nonne and Oppenheim lay stress on the cases, familiar to every neurologist, where precisely similar conditions develop and remain permanent, although no question of compensation arises, and Oppenheim urges that the influence of physical injury has been too much neglected. The comparative rarity of hemianesthesia and contracted visual field among patients in clinics where esthesiometers and perimeters are in daily use, militating as it does against Mendel's criticisms, was not urged in the discussion at Hamburg.

The search for symptoms which may act as objective evidence of disease naturally assumes great importance. To Strümpell's claim that anesthesia, contracted visual field, exaggerated knee-jerks and excitable pulse are all the products of suggestion, Oppenheim utters a vigorous denial. In many cases these symptoms are found only on careful examination, and are not in accord with the patient's complaints. If they are suggested by the processes of examination — which is very doubtful — they prove at least a morbid suggestibility on the patient's part. Sänger, too, holds to their objectivity, as they often occur where there are no subjective complaints, and he has found all these symptoms in alcoholism, the early stages of syphilis, and other conditions. Mendel and Fürstner both hold that even if a man has hemianesthesia, he is still capable of working just as well, but Oppenheim and Remak both claim, with justice, that he is psychically sick or that he will soon become so. The question of the importance and value of contraction of the visual field has also been much discussed, but there is less difference of opinion. Rumpf, to be sure, lays less stress on the importance of anesthesia and analgesia, and upon contraction of the field, which are

all usually hysterical phenomena. Sanger holds that under proper control it has the value of an objective symptom, and that if the field be tested by using different sized squares, by comparing the color fields, by projecting the field to different distances, and above all, by Wilbrand's method of using luminous objects in a dark room, we exclude all simulation and have an absolutely sure test. Liebrecht agrees with this, affirming that an examination of the visual field gives pathological data in most cases, and that in objectivity and diagnostic certainty it is inferior to no other neurological test. Much of the difference in opinion, he thinks is due to the belief that a slight contraction of the field is of no consequence. On the contrary, any contraction, over ten degrees, is pathological, of the same diagnostic significance as a marked contraction, and is due to organic disease of the eye or to a functional neurosis. Rumpf lays much stress upon three symptoms: a fibrillary twitching of the muscles, noted especially after marked exertion, the action of cold, or the cessation of a strong faradic current; a quantitative diminution of the galvanic excitability of motor nerves; and an increase, diminution or irregularity of the heart's action on pressure on alleged tender areas, first described by Mannkopf. Tarchanoff has claimed that nervous people may show an increased rapidity of the pulse under the influence of ideas, but this Rumpf claims must be extremely rare. Bottiger thinks the symptoms described by Rumpf are indicative of neurasthenia. Sanger adds to these signs vaso-motor disturbances, edema, increased knee-jerk and increased action of the heart, beside confirming Rumpf's opinion as to the Mannkopf test. Oppenheim, in his monograph, points out a modification of this latter test, when there is a marked increase of the pulse after voluntary effort, as evidence that the patient was exerting all his strength although accomplishing very little; he uses it also as a test of analgesia, obtaining the increase of pulse in stimulating the sensitive side, but no increase on stimulating the analgesic side. Strumpell finds that a healthy man can, when fasting, consume 200 grammes of sugar. In severe hysteria and hypochondriasis this power is diminished. He gives such patients, when fasting, 100 grammes of glucose, and finds sugar in the urine in an hour or two, which after three or four hours has disappeared. Finally, Jessen urges that the argument that, if there be no objective signs, there is no disturbance of wage-earning capacity, is calculated to do much harm, for there are many cases, with no objective signs but with some depressive disturbance of the mind, where the loss of wage-earning power is very great.

The prognosis is still open to question, but most of the disputants were disposed to regard it as grave. The prognosis of the special types of disease described by Rumpf, Nonne and Furstner has already been mentioned. Jessen, Nonne and Oppenheim agree that the prognosis especially in regard to wage-earning capacity, is apt to be bad, and Nonne cites twelve

cases reported by him in 1892; of these only two are now well and four are able to do a little light work, four were incapable of any work, one had committed suicide, and one had disappeared. Furstner, admitting the poor results of treatment, says that it is because the treatment was improper and that the patient was filled with pessimistic ideas as to the outcome of his case. Wilmans claims that patients do not recover, and are able to do only light work at the best, because, if they admitted recovery or did full work, they would lose their annuity which the law now grants. This is emphatically denied by Jessen and Oppenheim, who claim that hunger is a more potent factor in making men work than the desire of gain in preventing them, and they cite many cases where the patients do not receive sufficient compensation to keep them from want, yet where, after many years, they are still incapable of earning any substantial income although they have made many attempts to do so.

With regard to treatment there is more harmony. Sanger, Rumpf, Lenhartz, Wiesinger and Furstner all agree that it is better for such patients to do what work they can, as early as possible, and thus strive to overcome their disability. This was Strumpell's teaching, and it is opposed to the opinion maintained in this country by Dercum and others, who urge the early employment of the rest cure. It is certain that in some cases of neurasthenia and hysteria, not of traumatic origin, it is better for the patient to undertake light work than to be subjected to the rest cure, and the same is undoubtedly true of a part of the traumatic cases, but in other cases of traumatic origin work is quite impossible, and the rest cure is the only treatment.

On the whole, these discussions have established certain facts in regard to the traumatic nervous affections which are of value. They have helped to differentiate various types of disease, and have thus done something toward discarding the confusing term "traumatic neurosis." They have brought forward certain objective symptoms and helped to confirm the value especially of contraction of the visual field and of Mannkopf's symptom. The old view that most of the patients were simulators has been pretty well abandoned. The seriousness of the prognosis seems to be fairly well recognized, although there is still dispute as to the reasons which render it serious. The reports of the later histories of cases are constantly increasing, and prove the grave character of the affections. The influence of suggestion, litigation, and the desire of gain seems to be still in dispute, but the increasing number of cases, not only in Germany but in other lands, which present precisely the same symptoms as do those which seek for compensation for their injuries, seems to indicate that this influence is greatly exaggerated. Finally, in pathology there seems to be a return to the old views of Westphal, that in a certain proportion of the cases, at least, the symptoms are due to structural changes in the central nervous system.

## MEDICAL INSPECTION OF PUBLIC SCHOOLS.

At a meeting of the New York Board of Estimate and Apportionment, held December 3d, Mr. Wilson, President, and Mr. George B. Fowler, Commissioner, of the Health Department, made a statement in which they declared that it had long been the opinion among their medical officers that the greatest source of transmission of infection and of contagious diseases among children is through their contact with one another in the schools. They, therefore, proposed a daily inspection of the pupils of each school by a physician appointed for the purpose, whose duty it should also be to ascertain whether children absent from school are ill with contagious diseases. In order to defray the expenses of such an examination of pupils they asked for funds to employ an extra corps of 150 physicians, at a salary of \$30 a month each, for ten months of the year, and a chief inspector at an annual salary of \$2,500, to supervise their work. The total amount required would be \$47,500 a year.

In his address to the Board, President Wilson said that for two and a half months Dr. George S. Lynde had been investigating the subject in the public and parochial schools, and that the Board of Health, in consequence of the results reported by him, had arrived at the conclusion that the death-rate of the city would be materially reduced by such a daily inspection of scholars as that contemplated. Dr. Lynde's examinations were made in districts on both the east and west sides of the city. During three weeks in October fourteen cases of measles were investigated between Houston and 59th Streets, east of Third Avenue, and in this inspection cases were found in twenty families which had not been reported. In nine of them no physician had been called in. These cases were contracted as follows:

In a parochial school . . . . .	13
In a public school . . . . .	2
In an institution . . . . .	1
In a kindergarten . . . . .	7
In another infected house . . . . .	1
From previous cases in house . . . . .	8
From unknown sources (all infants) . . . . .	5
Total, . . . . .	37

In accordance with the advice of Mayor Strong, the statements and reports were transmitted for consideration and a report.

This system of medical inspection of schools has been in active operation in Boston for the past two years, under the supervision of the Board of Health. And this city was, we believe, the first on this continent to adopt it. There are now 49 medical inspectors at a salary of \$200 each. Incidental to this school inspection the same corps of medical men is also serving as agents of the Board of Health in the control of contagious diseases which are treated at home. Such of our readers as may wish to refresh their memories in regard to the actual working of the system are referred to a paper by Dr. S. H. Durgin published in this JOURNAL.<sup>1</sup>

<sup>1</sup> April 9, 1896, p. 360.

The New York Health Department is, we opine, in possession of detailed statements of the operation and results of the system in Boston, and those to whom the proposal has been referred by Mayor Strong cannot do better than to consult them.

## MEDICAL NOTES.

**THE NEW MASTER OF THE ROTUNDA HOSPITAL.**—Dr. R. D. Purefoy has been elected master of the Rotunda Hospital, Dublin, to succeed Dr. W. Smyly.

**TRAFFIC IN DEAD BODIES.**—H. N. White, keeper of the morgue of Bellevue Hospital, New York City, since 1868, has been suspended pending an investigation by the Commissioners of Charities. He is charged, it is reported, with selling dead bodies to the Polyclinic.

**THE DIGNITY OF OFFICE.**—Lord Mayor Faudel Phillips of London broke down while introducing Ambassador Bayard at a meeting recently, owing to the weight of his official robes. He sat down suddenly, took the robes off in the presence of the audience, and was restored with the aid of Mrs. Bayard's smelling bottle.

**THE PRESIDENT OF BRAZIL A PHYSICIAN.**—The present President of Brazil is a physician and a person of much distinction in his profession. Senhor M. V. Pereira is forty-two years of age, is President of the Medical College of Bahia, and before his present promotion held the office of Vice-President of the Republic.

**A CONFERENCE OF LEPROLOGISTS.**—There will be held at Berlin, in October, 1897, a conference of a very limited number of renowned leprologists and delegates of the different governments to discuss the slow but sure increase of leprosy and the measures to oppose to this plague. The conference was fixed for the month of March, 1897, but the scientific expedition of Prof. Robert Koch to South Africa (for the British Government) has necessitated a delay of the date. The members of the organizing committee are Drs. Armauer Hansen (Bergen in Norway), Robert Koch and O. Lassar (Berlin), and Edw. Ehlers (Copenhagen) as Secretary.

**THE BICYCLE CHECKS TUBERCULOSIS IN WOMEN.**—At the last quarterly meeting of the American Statistical Association, Dr. S. W. Abbott, Secretary of the Massachusetts Board of Health, presented some interesting figures regarding the proportion of pulmonary tuberculosis in females to that in males in Massachusetts. The rate in 1851 was 1,451 females to 1,000 males; in 1890, 1,055 females to 1,000 males; and last year, only 974 females to 1,000 males. Last year was the first in the history of the State in which the number of deaths from phthisis in females was smaller than that in males. The fact that a uniform reduction in the rate of female deaths be-

gan some five years ago, about the time when women were beginning to ride the bicycle extensively, Dr. Abbott considers significant, and he is inclined to attribute the decrease in the death-rate to the great increase in open-air exercise among women which has been inaugurated by the use of the bicycle.

#### BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.**—For the week ending at noon, December 9, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 101, scarlet fever 21, measles 133, typhoid fever 40.

**DEATH OF A CENTENARIAN.**—Catherine Cross, aged one hundred and one years, died last week in Somerville, Mass.

**A MEMORIAL TO DR. F. H. RANKIN.**—A subscription for the Newport (R. I.) Hospital, to take the form of a memorial to the late Dr. F. H. Rankin, has been started in that city. It is hoped that the subscription may amount to \$5,000.

**FAILURE TO REPORT DIPHTHERIA.**—After some little delay a fine of fifty dollars and costs, the minimum allowed by the law, was lately imposed upon a practising physician in the Charlestown District for failing to report a case of diphtheria to the Board of Health. Complaints were lodged by the board, and the Police Court, before which the case came, finally took action. We regret to see it reported that the court, when imposing the fine, stated that in its opinion the failure to report the case was unintentional and that sentence was passed because the law rendered it obligatory. The injury to the community is likely to be the same whether failure to report arises from carelessness or from wilful negligence, and the law is designed to protect the community.

**INDIVIDUAL COMMUNION CUPS.**—A proposition to give up the use of the old communion service which has been in use by the church for about one hundred and fifty years and to substitute individual cups, has been under consideration for some time at the Old South Church, Boston. When brought to a vote recently a majority of the governing body rejected the proposition. Whilst sympathizing with the sentiment which probably dictated this action, we think it is contrary to the teachings of modern medical science.

**THE BOSTON THURSDAY EVENING CLUB.**—The Semi-Centennial of the Boston Thursday Evening Club was celebrated at the regular meeting December 3d, at the house of Dr. J. Collins Warren, whose grandfather, Dr. John C. Warren, was the founder of the club.

**PHYSICIANS ADDRESS THE BEACON SOCIETY.**—The Beacon Society at its meeting on November 28th, was addressed by Drs. J. C. Warren, W. T. Councilman and E. W. Dwight on the subject of the Hospitals of Boston. Mr. A. Shuman, President of the Board of Trustees of the Boston City Hospital, also

addressed the Society on the history and development of that institution.

**A NEW SURGICAL OPERATING BUILDING AT THE BOSTON CITY HOSPITAL.**—The new Surgical Operating Building of the Boston City Hospital is finished, and the surgical operating service has been transferred from the old building to the new. The first operation was performed on Thanksgiving Day morning, by Dr. David W. Cheever, Senior Visiting Surgeon, in the presence of the Surgical Visiting and House Staffs. Dr. Cheever gave some reminiscences in connection with the hospital which are of interest to those who are now or have been connected with it.

"On the opening of the aseptic operating-rooms, as I am the only survivor of the original surgeons, I was asked to say a few words. Perhaps most of those present do not remember the old operating-room which was placed in the dome. I am sure they do not know that patients were carried up to it by a lift in the closet of the present telephone room, which was operated by a crank ground by a man. The result of this arrangement was a very slow and laborious task for the operator; and sometimes accidents occurred with this lift. I suppose it was owing in part to a blind superstition which had come down to us from former times that our amphitheatre was placed in such a lofty position, or it might have been the architect's ambition which aimed to make the City Hospital resemble the façade of St. Peter's. More probably it was because in old times, before ether was discovered, amphitheatres were put out of the way of other people in order to avoid the noise and cries of the patients.

"At any rate, this insufficient room was used, with great inconvenience, from 1864 till 1876—twelve years. At that time, the growth of the hospital and the increase in the attendance of students and clinical instruction required larger accommodations.

"In 1876, our present amphitheatre was finished and occupied; it seems hard to believe that we have now used it twenty years.

"Now, in 1896, thirty-two years from the first operation done in the old amphitheatre in the dome, I am asked by my colleagues to do the first operation here in this aseptic room. It seems to me that I might improve the occasion by alluding to what is a great distinction between these different epochs.

"First, the amphitheatre in the dome, before the results of anesthesia were fully realized;

"Second, the large amphitheatre built for the purpose of greater clinical instruction; and

"Third, this room of glass and stone and iron, which is dedicated to pure aseptic surgery.

"Anesthesia, clinical instruction, asepsis, then, would seem to mark the three epochs of our hospital; and I often wonder, inasmuch as thirty years have brought to pass all these improvements, what surgery may be thirty years hence. It seems to me it has reached its largest limit of operations, and that operations henceforward will probably decrease; because I think that the progress of bacteriology will enable us

to prevent a good many diseases, and will anticipate the surgeon by curing cases before they reach his hands."

#### NEW YORK.

**A PHYSICIAN DIES OF TUBERCULOSIS.**—Dr. Frederick Arnold Manning, a graduate of the College of Physicians and Surgeons, New York, in the year 1884, died of tuberculosis in Denver, Col., on December 3d. He practised in New York until a few months ago, when he was obliged to give up work on account of his health.

**DEATHS OF DRS. BAILEY AND WOODRUFF.**—Two prominent practitioners in Orange County, New York, died on December 1st. One was Dr. Charles I. Bailey, of the city of Newburgh, where he was a member of the Board of Aldermen and an influential citizen. The other was Dr. William H. Woodruff, who had practised for forty years at Pine Brush. He was graduated from Union College in 1851, and died at the age of sixty-five. He had held a number of public positions.

**DEATH OF DR. ARNOLD.**—Dr. John A. Arnold, medical superintendent of Kings County Hospital, died suddenly at Rockland, Rhode Island, on December 4th. He had not been in good health for some time, and November 21st the Commissioners of Charities and Correction granted him a twenty days' leave of absence. Dr. Arnold was a bachelor, and about fifty years of age. After being graduated from Bellevue Hospital Medical College he began practice in Brooklyn. In 1877 he was appointed senior assistant physician at the Kings County Insane Asylum, and in 1881 superintendent of the County Hospital, with supervision of the Insane Asylum. In 1892, when Dr. W. L. Sylvester was made superintendent of the latter institution, he retained the superintendency of the hospital. In 1894 he was elected President of the Staff Association of Kings County Hospital.

#### Miscellany.

##### THE FIRST ADMINISTRATION OF ETHER IN IRELAND.

THE following extract is taken from a recent letter of Dr. William F. Frazer, of Dublin, Ireland, to Dr. Horatio Storer, of Newport, R. I.:

"As we are having a commemoration of anesthetic discoveries, you may like to know that in Ireland it (ether) was first given by Dr. John MacDonnell in the Richmond Hospital, Dublin, that he inhaled it himself on the previous evening; and that I held the limb of the patient when he amputated. The news of chloroform was sent by Sir James Simpson to the late Sir Phillip Crampton (in a small pamphlet, I think); he gave it to my friend and master, John Hamilton, F.R.C.S.I.; and the same day I got two supplies of chloroform made here, and breathed it myself, and next morning gave it in the operating theatre (removal of forearm). The result in both ether and chloroform cases was satisfactory. For

some years after the introduction of anesthetics I was permitted to administer them in all cases requiring their use in the Richmond Hospital; and never, I am glad to say, had I the slightest accident or difficulty. The ether was given through a Wolfe's bottle, and I always gave the chloroform on a handkerchief. I attribute my success in its use to *minding my business* when administering."

#### Obituary.

##### WILLIAM WILLIAMSON WELLINGTON, M.D.

AT the monthly meeting of the Obstetrical Society of Boston on November 17th, the President appointed a committee to draft sentiments of respect anent the late Dr. W. W. Wellington, of Cambridgeport, a member of the Society since 1861, and for a few years past an honorary member; to enter the same on the records of the Society; and that copies be sent to the *Boston Medical and Surgical Journal* and the family of the deceased.

*Resolved*, That in the death of Dr. William Williamson Wellington the members of the Boston Obstetrical Society mourn the loss of a colleague devoted to the interests of the Society from its earliest days, of a friend and associate endeared to all who knew him by his unbending integrity, his faithful work, his never failing courtesy and kindness of heart, for his long friendships,—one of eighty full years with an older member of this Society haply still with us.

That we offer to his family and nearer friends in their deep bereavement our warmest sympathy and respect.

A. D. SINCLAIR,  
J. P. REYNOLDS,  
CHAS. E. STEDMAN, } *Committee.*

#### Correspondence.

##### THE CAUSE OF BURNS FROM X-RAYS.

BOSTON, December 1, 1896.

MR. EDITOR:—I enclose some extracts from two letters from Prof. Elihu Thomson, describing an experiment which he has made to determine the effect of the x-rays on the skin.

On receipt of the first letter, I wrote him saying that the experiment did not seem to me conclusive, as the effect might have been due to the brush discharge from the Crookes tube, or possibly from the ultra-violet rays.

In his second letter he discusses these important points, most clearly and concisely. I thought Professor Thomson's opinions might be interesting, as the question of burns from the use of the rays is being so much discussed. Personally, I believe still that the effect may be due to the brush discharge, because the only cases of burns of which I have heard, have been when the skin was in very close proximity to the tube, and because in my own cases I have had no such effects—always using the tube at least six inches from the skin.

Very truly yours,

E. A. CODMAN, M.D.

##### GENERAL ELECTRIC COMPANY.

LYNN, MASS., November 21, 1896.

DR. E. A. CODMAN. MY DEAR SIR:—I am very thankful to you for favoring me with the copy of the foot picture which I received to-day. We shall keep it here as the best specimen of work of the kind I have as yet seen. I am particularly interested in the distance you used and the time. The exposure seems to be very short for the distance, and the contrast between the bone and flesh is all that could be desired, while the sharpness in the ankle bones is simply wonderful. I would like to know just what tube you used to get the result, as it must have been working finely.

I am just now nursing an x-ray finger, which is a striking

example of what the rays may do if the exposure is long enough. Hearing of the effects of x-rays on the tissues, especially on the skin, I determined to find out what foundation the statements had by exposing a single finger to the rays. I used for this the little finger of the left hand, exposing it close up to the tube—about one and one-quarter inches from the platinum source of the rays, for one-half an hour. For about nine days very little effect was noticed, then the finger became hypersensitive to the touch, dark red, somewhat swollen, stiff, and soon after the finger began to blister. The blistering started at the maximum point of action of the rays, spread in all directions, covering the area exposed, so that now the epidermis is nearly detached from the skin underneath, and between the two there is a formation of purulent matter which escapes through a crack in the blister. It will be three weeks to-day since the exposure was made, and the healing process seems to be as slow as the original coming on of the trouble, while the pain and sensitiveness have largely left the finger within the last day or two, and the blister now covers the whole exposed back and sides of the finger. I think the finger will soon heal, but I assure you that I will make shorter exposures hereafter. Figuring out the equivalent exposure at six inches distance, it would equal about ten to twelve hours.

Yours truly,  
ELIHU THOMSON.

LYNN, MASS., November 25, 1896.

DEAR SIR:—I received yours in relation to my x-ray finger, and notice that you are sceptical of the effect produced, or its cause.

For my own part I am willing to admit that ultra-violet rays might possibly, if they existed in great quantity, produce some such effect, but I am not ready to admit that brush discharges had anything to do with it, for the simple reason that the potential I used was low, being obtained from a small 24-plate static machine, and there were no perceptible sparks from the tube to the finger. I wish you could see the wound, and I think you would be convinced from its character that it is not such a one as would be produced by anything in the nature of brush discharges.

I am strongly of the opinion that it is really a Röntgen-ray effect, and that neither ultra-violet rays nor brush discharges have anything to do with it. I do not propose to repeat the experiment, however, under any conditions, at least not for the present as the whole epidermis is off the back of the finger and off the sides of it also, while the tissue, even under the nail is whitened, and probably dead, ready to be cast off. The back of the finger for a considerable extent, where it received the strongest radiation, is raw, and will not recover its epidermis, apparently, except from the sides of the wound. It has, apparently, begun to granulate. Now, if it were a brush discharge, since the finger was held in practically one position, the effect should have been far more local than it is, and not have affected the sides of the finger on each side almost around so as to include the palmar surface. I have worked with brush discharges around electrical apparatus when I know the sum total of effect must have been many times what could possibly have been obtained from brush discharges in this case, assuming that they existed imperceptibly. I worked in the dark, and saw none and felt none. Now, as to the ultra-violet rays, I am convinced that they are not responsible for the result, chiefly because of the effect being continued laterally on the finger on each side, a portion of the finger which is not exposed to ultra-violet rays under the conditions unless they traversed a considerable thickness of the dermal layer, filled with blood-vessels which would absorb the rays. The rays, whatever they were, came from the bombarded spot, and were limited to the area which Röntgen rays could reach. The tube was a blue-glass tube with a clear German-glass window, of about one and one-half to one and three-fourths inches diameter opposite the bombarded spot. The fingers opposite the blue glass were not affected, as this is so dense as to absorb the Röntgen rays. Only where the little finger was opposite the clear

glass was it affected, and there is a sharp line of demarcation between that portion and the rest of the finger back of the blue glass. I think the blue or purplish glass would have been transparent to the ultra-violet rays, but not so to Röntgen rays. There is only the supposition left that the effect was produced by Röntgen rays or something that comes with Röntgen rays. The wound itself is very peculiar, and I never saw anything like it. It continued to develop and spread over the extent of the exposed surface for three weeks, and I am not sure yet that the affection has reached its limit on the exposed surface. I hope the healing process is well begun, but thus far I am not decided on that point. The exposure, it must be borne in mind, was a long one. At the distance I used, it was equivalent to twelve hours at six inches. I was fully as great a sceptic as yourself before I made the experiment, but I am now considerably more than convinced that if the exposure is long enough the results will follow. I may say, in conclusion, that my experience has been that with ordinary wounds, bruises, cuts, and the like, the healing process is quite rapid, showing that there is no lack of vitality of my tissues in that respect, and it would appear from my experiment that little effect of a deleterious nature is produced at all unless the exposure passes a certain limit, assuming a given strength of x-ray emanation.

I would say that I have recently learned from our Harrison works, that a young man who is working on testing Crookes tubes made there, had to stop work owing to the fact that his arms began to be affected, and I understand that this effect was produced through the clothing.

Yours truly,  
ELIHU THOMSON.

LYNN, MASS., December 1, 1896.

DEAR DOCTOR CODMAN:—I certainly have no objections to your publishing my letter to you concerning the effect of x-rays on the tissues, producing ulcerations, etc. I have lately made some inquiries and find that, so far as I can learn, two cases have been reported in Mr. Edison's laboratory, in which the effects were far more severe, since they took place over the hands and arms of the victims, and made it necessary for them to stop work altogether in connection with x-rays. The story goes that one of them was told by his physician that if he continued work it would be necessary to amputate his hands.

I can readily understand that this, as the effect produced by long exposure, transcends any effect that I ever saw or knew of as being produced by the most severe sunburn. The effect seems to be deeper than those in the very worst forms of sunburn attended by ulceration.

Yours truly,  
ELIHU THOMSON.

#### METEOROLOGICAL RECORD

For the week ending November 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		We'ath'r. s		Rainfall in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S...22	30.39	36	46	25	66	94	80	N.W.	N.W.	14	12	O.	C.	.13
M...23	30.74	32	43	22	84	78	81	N.W.	S.E.	7	10	F.	C.	
T...24	30.38	48	59	38	89	81	85	S.W.	S.W.	24	9	O.	C.	.06
W...25	30.56	43	46	40	84	85	84	N.W.	S.E.	9	4	O.	C.	
T...26	30.30	48	57	38	100	100	100	E.	E.	2	2	R.	C.	.30
F...27	30.09	64	72	57	90	89	90	S.W.	S.W.	17	15	O.	C.	
S...28	30.06	57	68	46	83	94	94	S.W.	N.W.	15	12	O.	R.	.30
<b>A</b>														

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 28, 1896.

City.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	602	183	11.90	15.81	1.02	1.70	5.10	
Chicago	1,678,967	367	127	15.12	17.92	5.04	3.08	6.16	
Philadelphia	1,164,000	389	118	9.62	16.38	.78	1.56	7.16	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	491,205	157	52	16.64	14.08	—	2.56	9.60	
Baltimore	496,316	142	44	9.10	11.20	2.80	2.80	3.50	
Cincinnati	336,000	100	28	8.00	11.00	—	2.00	6.00	
Cleveland	314,537	73	26	16.44	5.48	—	—	15.07	
Washington	275,500	86	12	4.64	12.76	—	3.48	—	
Pittsburg	238,617	85	35	23.94	13.68	5.70	7.98	6.84	
Milwaukee	275,000	—	—	—	—	—	—	—	
Nashville	87,754	22	6	8.30	—	—	4.15	—	
Charleston	65,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,687	35	13	5.72	20.02	—	—	5.72	
Fall River	88,020	30	11	16.66	13.33	13.33	—	—	
Lowell	84,359	37	14	11.10	13.59	2.70	—	2.70	
Cambridge	81,519	30	11	6.66	23.33	—	—	—	
Lynn	62,335	20	8	20.00	—	—	10.00	10.00	
New Bedford	55,254	19	7	26.30	—	5.26	—	21.04	
Springfield	51,534	15	7	—	26.66	—	—	—	
Lawrence	52,153	14	7	14.28	14.28	7.14	—	7.14	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	11	1	—	—	—	—	—	
Brookton	33,157	—	—	—	—	—	—	—	
Haverhill	30,185	10	4	20.00	10.00	10.00	—	10.00	
Malden	29,709	8	4	—	12.50	—	—	—	
Chelsea	31,245	13	4	12.58	20.37	—	—	6.79	
Fitchburg	26,394	7	2	14.28	—	14.28	—	—	
Newton	27,422	9	0	11.11	11.11	—	—	11.11	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	12	3	8.33	—	8.33	—	—	
Waltham	20,877	5	4	37.50	—	—	12.50	12.50	
Quincy	20,712	—	—	—	—	—	—	—	
Pittsfield	20,447	4	2	25.00	—	—	—	25.00	
Everett	18,578	8	2	—	—	—	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,354	6	0	—	—	—	—	—	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 2,395: under five years of age 750; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 275, acute lung diseases 342, consumption 279, diphtheria and croup 123, typhoid fever 53, diarrheal diseases 47, scarlet fever 21, whooping-cough 13, erysipelas 9, cerebro-spinal meningitis 7, measles 3.

From scarlet fever New York 12, Boston 5, Philadelphia, Nashville, Lowell and Waltham 1 each. From whooping-cough New York 5, Chicago 3, Pittsburgh 2, Boston, Washington and Providence 1 each. From erysipelas New York 3, Philadelphia, Boston, Cleveland, Pittsburgh, Providence and Melrose 1 each. From cerebro-spinal meningitis New York 4, Cambridge 2, Chelsea 1. From measles Pittsburgh, Fall River and Somerville 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending November 21st, the death-rate was 21.3. Deaths reported, 4,435: acute diseases of the respiratory organs (London) 472, diphtheria 90, measles 71, whooping-cough 56, fever 56, diarrhea 39.

The death-rates ranged from 12.5 in Norwich to 33.4 in Preston: Birmingham 24.2, Bradford 19.6, Bristol 20.1, Gateshead 21.2, Hull 20.8, Leeds 22.8, Leicester 13.1, Liverpool 29.2, London 19.9, Manchester 23.6, Newcastle-on-Tyne 18.9, Nottingham 21.6, Sheffield 18.2, Sunderland 18.2.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 28, 1896, TO DECEMBER 4, 1896.

FIRST-LIEUT. WM. H. WILSON, assistant surgeon, U. S. Army, is granted thirty days leave of absence to take effect about December 20, 1896.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 28, 1896.

A. G. CABELL, surgeon, detached from the "Michigan," ordered home and granted three months' leave.

F. J. B. CORDIERO, passed assistant surgeon, detached from the "Constellation" and ordered to the "Michigan."

L. MORRIS, assistant surgeon, detached from the Naval Hospital, "Philadelphia," December 5th, ordered to examination for promotion at New York December 7th, and then placed on waiting orders.

R. G. BRODRICK, assistant surgeon, ordered to the "Constellation."

T. C. WALTON, medical director, detached from the Naval Academy January 18th, instead of December 15th, and ordered to the Naval Laboratory, New York, January 19th.

H. M. WELLS, medical director, detached from the Naval Laboratory, New York, January 19th, instead of December 19th.

W. S. DIXON, surgeon, detached from special duty in Washington and ordered to the "Brooklyn" December 1st.

## OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING NOVEMBER 30, 1896.

BAILEY, P. H., surgeon. Granted leave of absence for twenty-five days from November 18, 1896.

MAGRUDER, G. M., passed assistant surgeon. Granted leave of absence for four days from December 5, 1896. November 28, 1896.

GARDNER, C. H., assistant surgeon. To proceed from Chicago, Ill., to Pittsburgh, Pa., for temporary duty, to arrive there on December 3, 1896. Upon completion of this duty to return to Chicago. November 25, 1896.

CUMMING, H. S., assistant surgeon. To proceed from New York, N. Y., to Southport Quarantine Station, Southport, N. C., for temporary duty. November 18, 1896.

## BOARD CONVENED.

Board convened to meet in New Orleans, La., for the physical examination of an officer, Revenue Cutter Service. H. W. SAWTELLE, surgeon, Chairman; SEATON NORMAN and H. W. WICKES, assistant surgeons, Recorders. November 27, 1896.

## AIKEN COTTAGE SANITARIUM.

The Aiken (S. C.) Cottage Sanitarium will open for patients, December 10, 1896. It is planned after the Adirondack Cottage Sanitarium under the care of Dr. E. L. Trudeau. It is a philanthropic work, and is for men only who are in the first stage of pulmonary phthisis. A nominal charge of five dollars per week is made, which includes board, washing and medical attention.

Further information can be had on application to

C. F. MCGAHAN, M.D., Medical Director.

## SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, December 14th, at 8 P. M.

Dr. F. I. Knight will present a paper entitled: "Treatment of Bronchial Asthma." Discussion by Drs. V. Y. Bowditch, J. J. Putnam and J. W. Farlow.

Dr. J. W. Elliot will report: "Cases of Gall-stone Surgery." Discussion by Drs. A. T. Cabot, M. H. Richardson and G. H. Monks.

JAMES G. MUMFORD, M.D., Secretary, 197 Beacon St.

SUFFOLK DISTRICT MEDICAL SOCIETY.—The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, Wednesday, December 16th, at 8 P. M.

At 8 o'clock. Short communications by Drs. Greenleaf, Minot, Morse and Taylor.

At half-past eight. Dr. H. F. Vickery, "Hemophilia."

Dr. H. F. Bowditch will speak on the Theory of the Coagulation of the Blood; Dr. W. F. Whitney on the Pathological Anatomy.

January 20, 1897. Dr. E. G. Cutler on "Gastric Disturbances."

By a vote of the Section, smoking will be permitted during the meetings.

E. W. TAYLOR, M.D., Secretary.

## RESIGNATIONS.

EDWIN W. DWIGHT, M.D., has resigned the position of assistant commissioner of Public Institutions of Boston.

DR. F. H. OSGOOD has resigned from the Massachusetts Board of Cattle Commissioners, of which he was president.

## CORRECTION.

In the letter from Dr. Francis H. Williams published on page 582 of our last issue, the phrase "in October cultures made," etc. (thirteenth line from the bottom), should read "in September cultures made," etc.



## Lecture.

MEDICINE AS A TRADE.<sup>1</sup>

BY DAVID W. CHEEVER, M.D., LL.D.

I PROPOSE to speak to-night of medicine as a trade; and did I not feel reasonably sure that your patience would hold out so that you would hear the succeeding lecture next Thursday, I should be very unwilling to give this one. This is but a prelude to what is to follow, and is as low as I hope that may be considered high, and as ignoble as that is noble. Some Frenchman, with a certain Roman terseness, has said that "medicine is the noblest of professions and the saddest of trades." As a trade, it certainly is a very sad calling. It is not conducted in a business-like manner. The modes in which the mere mercenary doctor, who is a poor creature at the best, manages to practically commit suicide from a business point of view, and to hinder his own advancement, are certainly very striking. We hear a good deal said nowadays about the honest dollar. The doctor has an honest dollar, if he can obtain it. We hear also a good deal said about the rights of labor; and some of us think, that, perhaps, the laborer is now getting rather more than his share of the goods of this world. At any rate, the ordinary laborer has reduced his hours of labor to eight hours, and the hours of the doctor as a laborer vary anywhere from twelve to sixteen, and sometimes to twenty-four. It being well understood that if he has twenty-four hours, during which he has been on a stretch of continuous work, the next twenty-four hours are not going to bring him necessarily rest; but after he has been up day and night, that the next day's work begins exactly the same.

Now, in considering the profession of medicine from the point of view of a trade, the first practical question which we naturally ask is "What does it cost to become a doctor?" By a doctor, I mean one who is well educated, and well adapted to cope with the difficulties of practice in a community. It costs, in the first place, practically eight years of labor either in a college and then in a medical school, four years in each; or else, if one does not go to college, then in some high school or academy, which consumes about as much time. We find now that the average medical student is turned out upon the world as a graduated doctor when he is from twenty-five to twenty-six years of age. If he has had the advantages of a college education and the medical school for four years, he is necessarily of that age. If he has not had those advantages, if he has not been able to go to college, then, in all probability, he has been kept back by poverty, which has obliged him to study more slowly, to work as he goes on, so that the time of life when he enters upon his professional work is quite as late as the more favored young man, who has had a university education. Eight years, by moderate computation, would cost certainly as much as eight hundred dollars a year, and that would bring an expense of six or seven thousand dollars. Many young men would expend a thousand or twelve hundred a year, and that would bring it to somewhere from eight to ten thousand dollars, in necessary fees. The large number of books to be bought; the instruments which are now

used in the practice of medicine as well as of surgery, and which the student is obliged to have; and the various incidental expenses which keep growing as science grows and as the study of medicine specializes more and more,—all these things would necessitate an expense of from six to ten thousand dollars. We will call it ten thousand dollars; eight years of study; and the young doctor twenty-five or twenty-six years of age. In any other business of life, if he had expended that number of years and that amount of capital, he would expect to be placed in circumstances where he would develop rapidly and make money with certainty, provided he succeeded in the business he had undertaken. But this is the doctor's plant, so to speak; this is the cost of his education. Having obtained this plant, it remains to be seen how far he can grow; and whether the circumstances which surround him in life are favorable to a rapid growth, or not. I would say here that it seems to me that the expenses of the doctor are about the same in the early years of his life whether he is in a large city or in a moderate-sized country town. In a large city he is obliged to expend more for rent and to live in a somewhat more luxurious style; but in a country town he cannot live without horses and carriages, and is obliged to keep from one to three, early in his practice. This he is not obliged to do in the city, so that the expenses rather balance themselves.

What does he do, what can he do with this costly plant? He has expended this amount of money; he has lost this number of years of his youth; and he is now ready to begin. In all other ordinary business trades the young man who is entering upon them advertises himself in some way: the doctor cannot advertise. Why cannot the doctor advertise? Because if he advertises, it is considered that he advances himself above his fellows, that he makes pretensions of being better than they, of being able to cure more people than they; and this, if pushed to a certain extent, flavors of quackery. While it is very injudicious for him to advertise, it is also improper for him to do it. If he makes any discovery he cannot own it, it belongs to mankind. Every one else who makes a discovery patents it, or has a trade-mark, or has some exclusive right of possession. Not so in medicine. Of course, the humane side of what we call our profession, and not our trade, obliges us to give whatever belongs to mankind freely to it, so that other doctors can use it on their patients just as much as we use it ourselves.

The doctor, so far as I know, is the only person who gives away something—which is his knowledge and his time—for nothing—which is his service for the poor; at any rate he is the only person who pursues this daily to any very large extent. He gives away something for nothing, in the sense of giving away something which has cost, and receiving back no absolute money in return. He can be sued for this gift; he can be prosecuted for what he gives away; and that is one of the peculiar paradoxes and hardships of our profession.<sup>2</sup> In other words, giving

<sup>1</sup> "If a patient applies to a man of different occupation or employment for his assistance who either does not exert his skill or administer remedies according to the best of his abilities, such person is not liable in damages; but if he applies to a surgeon, and he treats him improperly he is liable to an action even though he undertook gratis to attend the patient, because his situation implies skill in surgery. . . . The law has no allowance for quackery. It demands qualification in the profession practised—not extraordinary skill, but that degree which ordinarily characterizes the profession." See McClelland on Civil Malpractice, pp. 198-4.

<sup>2</sup> A Lecture given in the Post-graduate Course at the Harvard Medical School, October 15, 1896.

gratuitous services to the pauper who has fallen and broken his leg does not prevent the doctor from being sued at law, if the case does not prove a success, although he put forth his best efforts. Here, then, it seems to me to be the one instance in the world where a person can be sued for what he has given away — his knowledge, his time, his skill, his best efforts; and he has no way of defending himself except to hire a lawyer at considerable expense to prove that he is right; and to justify himself in the eyes of the world, at a loss of a considerable portion of his fees, for months or years.

He cannot sue others very well for his debts. Why not? Because that savors of oppression. It is the taking advantage of people's misfortunes; it is taking advantage of their sickness and their weakness; and they frequently, of course, put it on the ground of poverty — that they are unable to pay; and if a suit is brought by the physician, although he may recover it, it is a question whether it is useful to him in the long run, and whether it does not in the end injure his reputation; and whether he had not better put up with the loss, unless in certain circumstances of aggravation where his character is attacked. If the patient complains, if the patient threatens a suit, then is the time for the doctor to sue for his bill; for by no other means can he contend against an adversary so mean and poor, as one who attacks him in this way.

There are also a good many other ways in which the physician is cheated out of his just dues. As long as it is necessary (and it probably always will be necessary) that the doctor should have a sliding scale in his prices to his patients, if he is a merciful man he endeavors to accommodate his fees to the patient's class. He often misjudges him, thinking him poorer than he is, rather than richer; and it often happens that he is deceived in this way, and does not charge the patient what he can really afford to pay. Furthermore, the public are willing to take advantage of the sliding scale, and say, "If so-and-so pay such a bill I cannot afford to pay any more." So in this way a good deal of what is justly due to the doctor may be gradually filched away; and yet there is no remedy for it, because it is not decent, not proper, that he should charge the same fees to the poor laborer as to one who is wealthy.

He is also considerably imposed upon in public duties. For instance, although he escapes by law being called on a jury, and is free from that loss of time and annoyance, he is obliged to go to court on every possible summons about some little case of no consequence, where his testimony is important to the individual who brings the suit; consequently he goes to court and is obliged to waste his time; and although he may not be obliged to give an expert opinion, yet he is obliged to go for a fee which is inadequate. The loss of business is not to be measured by the direct loss of time, but by what may have happened in that time, how many people may have been angered or disappointed at not finding you at your office at your usual hours when you advertise to be there, and when you are expected to be at home. I say, advertise by your card, but not in any other way.

Then again, there are a great many forms of papers and certificates which the doctors feel obliged to sign in order to satisfy their patients, for which they ought to receive a fee. Notably is that the case with the great life insurance companies. The life insurance companies

have more money than all the banks together, and yet some of them do not hesitate to extract a certificate from the doctor with regard to the death of some patient who is insured in their company and of whom he was the family physician; and as his testimony is of value to them they send their agent, and the doctor signs the paper; and as he does not know what circumstances the patient was in, he does not like to press a claim against the family itself; and sometimes insurance companies refuse to pay for those services. No service that he renders in returns of contagious diseases, births or deaths, ought ever to be paid for or ever to be charged for; the doctor does not expect it; and it is a part of his duty to the community that he should give those services freely.

Now the young doctor having started with his plant, and his loss of eight years of time, begins to seek for patients; and the first great injury that is done him in immediate practice is the fact that a large number of those people who might otherwise employ him are tempted to go to hospitals and dispensaries and receive gratuitous treatment. Many of them need it, many of them do not need it; and it is almost impossible for hospitals and dispensaries to discriminate between the two classes. Many of those who go neat and clean are the poorest; and many miserable drunken creatures have money at home, with which they might well pay the doctor. This, of course, inflicts an injury on the young doctor; it is among this class of people that he gets his first patients. It is said, I think with truth, that in London one person in seven is treated gratuitously in hospitals. Apply that to Boston, and we should have sixty thousand patients visiting our hospitals and dispensaries. And when you look at their annual reports, and reflect how many departments there are, and how the patients are scattered about over the field, I do not think this is much exaggerated for Boston itself.<sup>a</sup> Especially is this so here since our population has changed. Poor people used to have a self-respect, they preferred to stay at home; the hospital patients were mostly Irish; but since the Slav and Latin nations have come in, they always expect to be hospital patients; they never mean to employ a doctor in any other way. It is their first thought when they are sick, to seek the hospital, where they get the best treatment free of cost. This has made a great change in our community, and it must have made an equally great change in all our large manufacturing towns.

Does the doctor get any compensation for this? If possible, he gets attached to a hospital or to a dispensary, and he goes and gives a good many years of the best part of his life to a gratuitous service in this institution for various reasons — not wholly unselfish reasons, but considerably so; that he may see practice; that he may get experience; and that he may take other steps leading up to where he wishes to place himself in his profession. All this works to his advantage, undoubtedly; but let us consider at what a cost. The best part of his life is given to gratuitous service; when he comes round to see those patients who can pay him, he brings to them a tired brain and tired limbs; and it is not too much to say that the hospital patient gets the best service of the two. He struggles to keep up and retain all the practice he gets

<sup>a</sup> It was reported to the British Medical Association, meeting for 1896, that in Birmingham, in one year, 128,000 was the grand total treated free in public institutions. The population of Birmingham is about the same as that of Boston, namely, 500,000.

outside; he struggles to keep up with his colleagues in the hospital; and altogether it is a bitter effort, which in the end, no doubt, pays; but for a number of years, through his earlier life, it is a discouraging struggle.<sup>4</sup>

I contend also that the doctors, who in so many specialties establish clinics and tempt patients, and do everything to get material for instruction; I contend that they encourage mendicancy, and that they rob their brother of fees. I have no remedy to offer for this;<sup>5</sup> it is inseparable from the competition where a city is overstocked with doctors, all of whom are struggling to maintain themselves and to advance themselves, and this is the only way they see to do it. I only cite this as one of the business features but not of medicine in its noblest aspects. We propose to take that in the next lesson; but to-night we take the lowest, basest and most ignoble view; we take a mere business view, and that alone; and you can see the evil that is practically done to a large number of struggling doctors. If they are surgeons, a hospital experience is necessary; if they are physicians, it gives them the best practice; if they are specialists, they cannot get along, they cannot develop themselves in their pursuit unless they have clinics of the poor upon which to work, and upon whom to show how much they can benefit others, who may call on them later, when they have obtained fame.

As the doctor grows a little older he comes into contact with two forms of competition; one is what I will call an honorable competition, and the other is a dishonorable competition. In the honorable competition he contends, like any other man, with his fellows for such practice as he can get without robbing other people, without wronging any one; with a proper view of advancing his own interest in every legal and proper way.<sup>6</sup> But there is also a dishonest competition, which robs him in a great many ways. Some doctors who are not so sensitive as others will gradually take away his patients in one way or another. He, also, having no right in what he does, having no right in the property which he gives to others, having no right in his prescriptions which he gives to the sick, these necessarily become public property, and are largely repeated and repeated, over and over again, by many druggists; and if they happen to be a happy combination which suited A and B, then C and D are furnished them by the apothecaries without any fee to the doctor. It is

<sup>4</sup> I can see but three remedies for hospital abuses, and they are partial ones: First, the attending physicians and surgeons should be salaried; second, if not salaried, they should be paid by all private-room, or well-to-do patients; third, a selection should be carried out by the hospital authorities between the very poor and those able to pay something, and the latter should pay both the hospital and the doctor. The first and second measures would indemnify the hospital doctor at the expense of his brethren; because first, he alone would be paid for treating the poor; and second, he would attract the well-to-do to a hospital where board and attendance is relatively cheaper than elsewhere, and hence wrong other doctors. The third measure is partial, and experience so far, has not proved it practicable.

<sup>5</sup> In our country districts there is no organized medical charity. The country doctor must attend all, but he loses less than the city doctor. Barter prevails; he gets paid in other things than money—labor, crops, wood. But in England the Mutual Medical Club and the Poor-law Union, prevail in the country as much as in towns. For deplorable annual fees the doctor attends families and individuals; the abuse is a crying one and is constantly referred to in medical journals. In Paris a physician, past middle age, and said to be reputable, recently killed himself, because, as he alleged, hospitals and dispensaries had gradually reduced his income until he was very poor. There is more room and opportunity in America, still; all good doctors can get a living; but can they in another fifty or one hundred years?

<sup>6</sup> Should rich men practise? The fees they receive are so much taken from the common funds of poorer professional brethren. Should they not devote themselves to science, to experimentation and to teaching?

a well-known evil, it is a very large evil, and it is a direct robbery of the doctor whose knowledge, whose brains, whose insight, perhaps whose exceptional insight, have enabled him to get up some combination of medicine that has done a great deal of good. This prescription is passed around from patient to patient, repeated over and over again at the druggist's counter; finally, after the doctor's death, is known by his name; and you will see with some of the druggists of this city the prescription of some of the older physicians advertised in their stores as a work of skill of certain old doctors who have long since passed away. So that here the doctor is robbed again; he loses what he has done; he gives involuntarily to the public a great deal more than he meant to. He enriches others who claim these things as specifics, place them before the public by advertisement, and vend them for more than they are worth, perhaps, but still make fortunes out of them.

There are a number whom the doctor must attend, and I mean apart from the very poor, whom he does not feel it is right to extract a fee from, or to charge. Such used to be the case largely in regard to the clergy. Such is to a certain degree the rule now. Of course, it would depend somewhat how one would feel in reference to the position of the clergyman; if he happen to be a poor country clergyman he cannot afford to pay the doctor; but there are some who are in much better circumstances than the doctor himself and well able to pay for his service. It is not customary, and it is not proper, that the doctor should charge anything to his brother physicians. They have free right to his services; and as he grows older in the profession he will find that they are more likely to consult him on account of his age and experience; hence, while his youth was considerably taken up with the poor who could not afford to pay, his age may be taken up by brother physicians who for themselves and their families wish to take advantage of the years that have passed over his head, thinking that greater wisdom lies therein, than perhaps in youth. This, bear in mind, is only spoken of in relation to the trade, and not to the profession. We should be very sorry in the profession to refuse such service to the brother physician and to the clergyman; but, as a trade, I speak of how the doctor is committing pecuniary suicide almost every day he is practising medicine.

Then again, there are a great many anxieties for which there can be no compensation, and which the doctor has got to count in as costing so much in nervous strain, in loss of sleep perhaps, or perhaps in worry with regard to the future. The doctor, you must bear in mind, has to carry the burdens of all sick people; he is their friend, advisor and counsel, and if you look at it from a plain business point of view, the fact must remain that this must be counted also as a somewhat discouraging feature. He does not get and sell a piece of cloth as the tradesman does; and he does not feel that the piece of cloth that he sold is as good as it was when it came into his hands, or is just the measure, or if it is any other article of merchandise, that it is just weight, and that the transaction is perfectly honorable and that it is the end of it; and it does not matter to him what has become of that piece of cloth, and who has bought it. On the other hand, he has treated a sick person, and he has asked himself many anxious questions as to his recov-

ery. Then, there will happen to him occasionally those terrible unexplained deaths, sometimes an autopsy not being permitted even in our present state of advancement—those sudden, unexplained and unexpected deaths—a shock as much to him as to the friends and family, often an injury to his reputation, and the cause of a great deal of criticism among his friends and patients. All this he has got to take into his estimate of medicine as a trade. It is his business. He gives out an enormous amount; he gives mentally more or less; and his services are more costly in brains and in patience and in endurance and in suffering than in any other form of the ordinary business of life.

In spite of all this, the number of young men who come forward to study medicine is as large as it ever was, and perhaps is somewhat increasing; and although all callings and professions are somewhat overcrowded, certainly medicine is as much so as any other; and the doctor has now to contend, as he always has had to contend, not only with various irregular physicians who assume to cure people without proper education, but he has to contend with a new class of obstacles in obtaining a livelihood, and that is in the large development of specialists. It is true, no doubt, that specialists are necessary; that they would not exist if they were not necessary; and while they are a great burden upon the patient, requiring him to employ a great many persons for different parts of his body, they are a great drawback to the physician because they diminish his patients, and they destroy what used to be the family doctor. Such a person seldom exists now except in some isolated place; and it is owing to his isolation that he retains a large circle of duties among certain families. Meanwhile, in larger communities, where there is more friction and where specialties develop more easily, then this, that and the other are speedily called for, and the family physician gradually ceases to exist. One person attends to one class of duties and another person to another class of duties; and you must see, that while this may bring large fees to a few persons, it must diminish the income of the great body of physicians. And this results in rendering the position of the general practitioner after he has spent his money and his years, not so desirable as it used to be.<sup>7</sup>

It is hardly fair, it is almost too base, to speak of the duties of the medical profession to the poor. Boërhave said, "The poor are my best patients, for God is their paymaster." Very true. Meanwhile, although it seems almost too base to take up such a subject as this, yet if we look at it from a purely mercantile point of view, we must recognize the fact that the poor in all communities are more numerous than the rest, that they have got to be taken care of; they give to a doctor a great deal of satisfaction in getting well, but they do not give the honest dollar that he has got to pay out for his rent. But, looking at medicine as a trade, the grocer does not expect to treat the poor; he may occasionally give away something, but he sells, and when he sells he expects money, and he expects to collect it on the spot. When he settles down in a neighborhood he recognizes a certain *clenféle* in that neighborhood which will bring him in enough money to live on. On the other hand,

the doctor, as a tradesman, if he goes and looks at a town from a business point of view, sees a large number of people in the community whom he expects to treat without pay; only they may bring him a certain popularity. Now, the question is, Do they do that? They do, to a certain degree. They add to his reputation for humanity; they get him known favorably as a kind man, and perhaps, also, as a skilful man. And so practice may gradually creep on from the poor to the kitchen; and from the kitchen to the parlor; and thence through the higher walks of life.

Meanwhile, we must consider this from another point of view. When I was a dispensary doctor myself—and I have heard a great many other dispensary doctors say the same thing—while the patient was pretty poor he would employ the city doctor, but when he was a little better off he would say, "I don't wish to employ the city doctor; I will take another doctor of a better grade." Instead of employing and paying the one to whom he ought to be grateful, he is apt sometimes to employ some one else, through pride. That is undoubtedly true. Generally things are valued for what they cost. When they cost nothing they are valued at very little. When anything is paid for, it is counted for more. This principle is carried out in a good many of the hospitals and dispensaries by charging a small fee for medicine. I will venture to say that that medicine is more appreciated and is taken with better care than if it were gratuitous. It has a kindly effect. It has a restraining effect; and while all the world, almost, will go and do some very foolish and tedious thing because they can get it for nothing, it isn't because they value it, but because it is offered to them. Mr. James Russell Lowell used to say that a person would go and sit through any amount of boredom for the sake of getting a gratuitous lecture. I have no doubt that is true. But when the poor seamstress, or laborer, or his wife, has become very sick with some chronic disease, what wonder, that if they can, they seek higher advice, and consider it higher because they pay for it?

This is but a prelude for what is to follow next time, to show how all his kindly instincts are fighting against the young doctor when he is struggling to get his living. Meanwhile, as Abernethy said once to a lecture-room of students, so I will repeat: "Looking around his class-room when a new class came in for the year, he said, 'God help you! what is going to become of you all?'" That might be said to-day! and yet the tide of medical students never ceases. And if they do not attempt to pursue medicine as a trade; if they take the nobler view, and pursue it as a profession; if they are willing to submit to these ignominies and worries, they will find as they go on, that there is another class of considerations which will render it one of the finest callings in the world.

In view of that great jubilee which we are going to have to-morrow; in view of that God-given ether which came to us fifty years ago, how can we regard in a base light anything that man can create or invent? When he creates or discovers, he is nearest like his Creator. How can we regard anything that man can create to relieve human suffering, as belonging to any one person, as being capable of a trade-mark, as being capable of being held from the world, when it is going to be such a blessing to the community? I believe this celebration that we are going to have

<sup>7</sup> The average doctor in America may count on a comfortable living if he works and has fair ability; but not on getting rich, for many doctors die poor, and most doctors lay up little. Teaching, also, is very poorly compensated in money.

will exert the most refining and ennobling of influences; and I shall hope, after the celebration is over, that if you cannot be there, you will read what is said by the distinguished men who come from different parts of the country; and that you will be encouraged to press on to that nobler field, which I hope to show you next Thursday evening.

## Original Articles.

### ACUTE ANTERIOR POLIOMYELITIS.<sup>1</sup>

BY JOSEPH W. COURTNEY, M.D.,

*Assistant to the Physician for Diseases of the Nervous System, Boston City Hospital.*

My idea in selecting this disease as the subject of my paper is not to offer you anything especially new as to its etiology, but rather to combat the notion commonly prevailing among general practitioners—and also among certain writers of neurological text-books—as to its utter hopelessness from a therapeutic standpoint and to emphasize the importance of an early diagnosis.

The following clinical history is fairly typical of the usual mode of onset: The patient A. P., the youngest of five children, having been in robust health up to the age of twenty months, at that time suddenly began to get feverish and fussy, and vomited several times without apparent cause. She remained in a feverish state for three days, and at the end of that time it was found that she could not stand nor even sit. The legs hung lifeless, but the arms were at no time totally disabled. At the end of a week the arms had regained their usual strength, but the child was unable to move the legs to any considerable extent.

The striking and essential features of this case, as of all such, are the absence of prodromata, the suddenness of onset, and the gradual regression of the paralysis up to a certain point.

To go more into detail, the disease may come on while the child is playing about, or it may be discovered in the morning after an apparently normal night. The fever which is often present may last only a few hours or a few days and reach to the height of 104° F.; only in very severe cases does it remain above this point for any considerable period of time. Gastro-intestinal disturbances may play the prominent rôle; and it is to this class of cases that I would call special attention, for if the paralysis be general, it is usually mistaken for the inertia of prostration, the physician's attention is diverted from the actual condition of affairs, and a favorable prognosis given, which later has to be retracted.

Pain is generally stated by the text-books to be absent; but this is by no means so in all cases, and must be borne in mind when attempting to differentiate between the disease in point and scorbutus, or rheumatism.

The bladder and rectum are, as a rule, not affected, and coma or convulsions are rarely present.

With the subsidence of the fever, vomiting, etc., the most prominent feature of the disease, the paralysis, comes into play. This is of the flaccid variety, and is associated with atrophy of the affected muscles,

alteration of the electrical reactions, and the diminution, or complete loss of the deep reflexes. The paralysis is, in reality, probably present from the start, and is then usually widely distributed. It may involve all four extremities and even the parts supplied by the lower cranial nerves.

In one of the cases brought to the clinic disturbance of speech was noticed by the parents at the onset.

After three or four weeks, when spontaneous retrogression has ceased, some inference may be drawn as to the limbs, which will be more or less affected permanently. This permanent palsy may affect one or more parts of the body, but the lower extremities are much the commonest seat, the right being more frequently so than the left. The paraplegic and monoplegic forms are the most frequent, and the paralysis of a lower extremity is more frequent than that of an upper. The muscles involved are usually functionally and not anatomically related, as is frequently seen in the leg, where the tibialis anticus is paralyzed in connection with the quadriceps extensor femoris. These muscles are supplied by different nerves, but are associated in the extension of the leg in walking. In certain cases but a single muscle is involved, as the abductor indicis.

The atrophy which comes on in connection with the paralysis is usually of rapid development, and a marked difference has been noted between the size of the paralyzed and non-paralyzed limb within seventy-two hours of the onset. The distribution of the atrophy corresponds exactly to that of the paralysis.

The chronic stage of the disease is the most distressing, owing to the contractures and deformities of the limbs. The ligaments are frequently so lax and the paralyzed muscles so flabby that the limbs may be passively placed in the most bizarre positions. In one case which I saw the child used to amuse herself by seizing the foot of the fully extended leg and rotating the leg through an arc of about 180°. Almost any form of club-foot may result from the contractures, and the development of the bones of an affected limb is usually affected sufficiently to cause a shortening.

When the abdominal muscles are involved, the resulting deformity is sometimes mistaken by the parents for a tumor. Paralysis of the deep muscles of the back gives rise at times to severe lordosis or marked lateral curvature.

In spite of these cruel deformities the general health is frequently excellent in the chronic stage, and many of the children are extremely bright and interesting.

Etiologically the disease is now looked upon as depending upon a toxemia, the result of an acute infection, but what the special micro-organism may be whose toxine shows such fiendish predilection for the anterior gray matter of the spinal cord has not yet been satisfactorily shown. This theory of infection seems certainly, however, to be strengthened by the frequent observation of the epidemic occurrence of the disease and by the fact that both in this country and in Europe it occurs far more frequently in summer than in winter, that is, at a season when the receptivity of young children to microbic invasion seems to be especially exalted.

Pathologically the end results of the toxemic process are as follows:

(1) There is at times a complete absence of the

<sup>1</sup> Read before the Somerville Medical Society at its regular meeting held at the Somerville Hospital, October 1, 1896.

larger ganglion cells of the anterior horns, section after section showing nothing but the homogeneous shrunken gray matter. When cells are visible their contour is in striking contrast to the normal, every vestige of cell process having vanished, leaving shrunken nucleus-lacking cell bodies.

(2) The anterior nerve roots are diminished in size on the affected side of the cord, and the muscles supplied by the affected cells present characteristic conditions, it being found that many of the fibres have disappeared and are replaced by adipose tissue, while those which remain are much diminished in size.

**Differential Diagnosis.**—In the early stage, when the gastro-intestinal disturbance has been allayed and it is found that the victim is totally unable to move in bed, it is a common error to attribute this to the inertia of prostration. In this regard it should be remembered that prostration never causes total immobility, and certainly never a complete paralysis of one set of muscles.

The next most popular diagnosis is meningitis. In this latter it should be borne in mind that coma and convulsions—very rare in acute anterior poliomyelitis—are usually the first of a train of cerebral symptoms such as projectile vomiting, rigidity of the neck, headaches, cranial nerve affections and the like.

As regards the acute cerebral palsy of children, while the mode of onset may be exactly identical with that of the spinal, the clinical features are vastly different. In the spinal type, as I have attempted to show, the onset is sudden, with fever and vomiting, and is rarely attended with coma and convulsions; in the cerebral the onset is also sudden, with fever, but in this coma and repeated convulsions are the striking features. The spinal paralysis is flaccid, associated with atrophy; the cerebral is spastic, has no atrophy, but marked rigidity and contractures. Spinal paralysis may be general, or limited to one member or even a single muscle; whereas the cerebral is usually hemiplegic or paraplegic. In the spinal type one gets altered electrical reactions; in the cerebral normal reactions obtain. In the spinal, too, the deep reflexes are usually lost; whereas in the cerebral they are very much exaggerated. The intellect in the former is never permanently affected; in the latter it is not infrequently involved, and a concomitant epilepsy is not uncommon.

In a transverse myelitis we have perfectly definite sensory disturbance with increased reflexes and sphincteric involvement.

From hematomyelitis it is useless to attempt to distinguish. Severe cases of the latter succumb, while the less severe follow practically the same course. ◀

Progressive muscular atrophy has as its distinguishing signs, a very gradual onset and slow development. In this, too, faradic contractility is lost only when the muscle is very much atrophied, and the development of the limbs is not arrested.

Pott's paraplegia is differentiated by the deformity of the spine, by its very gradual onset, and by the spastic nature of the paralysis; moreover, the deep reflexes are increased, and radiating pains are present very early in the disease.

Peripheral neuritis usually causes a symmetrical bilateral trouble, is rare at the age when infantile paralysis is most common, and the pain and tenderness over nerves and muscles are of much longer duration than they ever are in the latter disease.

Within the last few years infantile scorbatus has been several times mistaken for infantile paralysis. At first sight the clinical picture where we have to do, for instance, with a hemorrhage into a knee-joint is not unlike that of certain cases of the spinal disease. There is apparent paralysis of the leg, and it may be impossible to elicit the knee-jerk. Scurvy, however, occurs most commonly about the eighth or ninth month, and always in bottle-fed infants; and a careful examination will elicit the fact that the apparent paralysis of a leg is in reality but a limitation of motion due to the pain in the joint, and that the absence of the knee-jerk is due simply to the muscular spasm and not to any nerve lesion. Besides this, there is in scurvy little or no fever and no great amount of general prostration.

Personally, I think that the pseudo-paralytic affections of scurvy are by no means as sudden as is generally supposed. Careful inquiry will often reveal the fact that the leg apparently so suddenly rendered powerless has been kept more or less immobilized by the child for several days previous on account of gradually increasing epiphyseal tenderness. This was very prettily demonstrated in one of my cases, in which it was noted with considerable surprise by the parents, that the child had ceased to kick the bed-clothes off at night for several nights preceding the actual occurrence of the joint hemorrhage.

**Prognosis.**—The tendency is to take an altogether too dismal view of the ultimate outcome of this disease. There is absolutely no necessity to predict that the child will be a hopeless cripple for life, as it is impossible to tell at the outset to what extent retrogression of the palsy will go on. It is even a fact that the permanent damage is sometimes less in certain cases in which at the outset the paralysis is very severe, than in others which start in less violent fashion. The muscles which show early and persistent changes in electrical reactions are the ones which should cause the most apprehension.

**Treatment.**—As the large majority of cases are seen by the family physician at the onset, he should, in directing his treatment, keep constantly in mind the fact that the lesion is primarily a vascular one, and do his utmost to limit the inflammation and preserve the integrity of the nervous structures by the use of counterirritants and vaso-constrictors. For this purpose the child should be kept in a quiet room, and small doses of some antipyretic, together with bromide and ergot, be given. Locally cold applications and mild counterirritants over the affected portion of the spine are indicated. The child should be carefully fed, and the bowels thoroughly purged by the use of small doses of calomel.

It is as regards the effectiveness of therapeutic measures in the chronic stages that most text-books are misleading, and this is a point I would particularly emphasize. The error arises presumably from the fact that the authors of such books base their deductions on the pathological condition rather than on clinical facts. Even Gowers states that at the end of six months all possible recovery is nearly completed.

Now this is distinctly not so, for it is not uncommon in a large clinic where cases are followed up and treated for years, to see children who were totally paraplegic at the end of six months and even a year, able to walk—with difficulty it is true—at the end of three or four years of faithful and persistent treatment.



As to treatment, it requires no elaborate explanation. It consists in the intelligent application of electricity and massage, and should be begun as soon as the acute stage has passed, and persisted in over the space of months or years. If the muscles react at all, faradism should be used for ten to fifteen minutes, two or three times per week. The massage should be given by a competent masseur or masseuse.

Formerly the custom prevailed of immediately putting a paralyzed limb into orthopedic apparatus, and the natural outcome was that the paralyzed muscles finding their functions supplied by mechanical means, made no effort to maintain their nutrition, and the resulting atrophy was rapid and extreme.

I do not mean to imply that surgical or mechanical measures are never necessary; they are certainly to be borne in mind as a last resort. It is better, of course, to have a tenotomy done in a case where the joint deformity arising from the over-contraction of non-paralyzed muscles is extreme and unyielding to both electricity and massage; but even in these cases we should return to our previous treatment as soon as the child has sufficiently recovered from the operation.

#### A STUDY OF CICATRICES, WITH REFERENCE TO RIGHT- AND LEFT-HANDEDNESS AND AMBIDEXTERITY.

BY J. N. HALL, M.D., DENVER,  
*Professor of Therapeutics and Clinical Medicine, University of Colorado.*

IN a rather extensive search through medico-legal literature during the past six months, I have been impressed with the fact that in many cases it has been of great importance to establish whether right- or left-handedness existed, or whether both hands could be used equally well in handling a weapon, pen, or for other purposes. The matter has generally been settled by the production of witnesses, who have testified freely in many cases to a given condition, when an equal number of witnesses has been brought forward who have testified to an opposite condition. It has recently occurred to me that in many cases the question could be better settled by an examination of the prisoner, if such an examination could be obtained, or of the corpse, in case this became desirable, by a study of the cicatrices upon the hands, such as are inflicted by every man who handles tools of any kind, but especially the pocket-knife. Although most left-handed boys are taught to write with the right hand, I believe the knife is commonly handled with the left hand in such cases, and many tools are used in similar manner in various trades. In women the study could not be expected to be of as much value, and still it has proved to be fairly conclusive in many cases. I should say further, that in the cases of professional and other men, not much given to the handling of tools, cicatrices may not be found, although in America, as long as the Yankee retains his reputation for whittling upon every possible opportunity, they will be present in most cases, and furnish more conclusive testimony than can be given orally.

I have found these knife-cuts, as one would expect to find them, upon the radial side and dorsum of the forefinger, upon the ulnar side of the thumb, and to a less extent upon the dorsum, particularly about the knuckle, and in many cases upon the radial side and

dorsum of the middle finger. It should be stated that, because of the fact that most hands present scars upon some parts of their surface, a decided preponderance of linear cicatrices upon one side should be necessary to justify a conclusion that implements were constantly used in the other hand, and such a preponderance we have found in most of the cases examined. Dr. Catherine F. Hayden has called my attention to the fact, that in women the forefinger of the hand in which the needle is not held shows the marks of the needle, although these would wear away in a short time if sewing were suspended, not being true cicatrices. Dr. J. N. Thomas has also mentioned that he has seen, in the hands of wood-carvers and engravers, in which the tool was not held, the scars of pricks made by the implement in question. Obviously the occupation of the person would have an important bearing in this connection.

The proposition that we should find, in most cases, scars upon the hand not holding the implement seems so reasonable that it should require but little proof; but, more in order to learn in what proportion of cases we should be able to form an opinion, I have collected the following one hundred successive cases, with the assistance of Drs. Will F. Hassenplug and S. D. Hopkins, who have done very careful work in the examination of the fifty cases which they have contributed to my list, many of which cases they have shown to me.

In the cases in which the cicatrices greatly predominated upon the left hand, generally in a ratio of from four to twelve or fifteen upon this hand to one to four on the right hand, we have simply stated the cases to be right-handed as they have invariably been, while in case the opposite condition existed, the great majority existing upon the right hand, we have called the persons left-handed, without error, excepting as is hereinafter stated in connection with ambidexterity.

The 100 cases were divided as follows:

Males, 88; females, 12.  
Right-handed, that is, with such a preponderance of scars upon the left hand that no doubt could exist, 78.  
Left-handed, where the opposite condition existed, seven.  
Cases without scars enough upon either hand to make a decision possible, eight.  
Cases in which the comparatively even distribution of the scars between the right and left hands made the question doubtful, and in which it was correctly assumed, nevertheless, that the person had originally been left-handed, and had since tried to use the right hand, six.  
Case in which many scars were found upon both hands, and yet the patient was right-handed, one, our assumption of left-handedness in this case being erroneous.

Thus, of the 100 patients, we may at once throw out eight who had no marks to guide us; and one whose scars were equally distributed, who was right-handed, and six similar cases who were left-handed, leaving 85 cases in which a positive decision was arrived at, in every case this decision having been correct. Further, of the seven cases in which the scars were nearly evenly distributed between the two hands, and which were presumed to be left-handed, six were actually so, so that the seventh subject in this group was the only one in whose case error really existed.

It must be noted further that many men claim to be right-handed who still use the knife with the left hand, which would presumably indicate that such subjects would use a weapon in attacking another person with the left hand, and especially so as, in times of excitement, it is well known that artificial habits give



way to those natural to one in his earliest years. In a very large percentage of cases, one may with great certainty affirm that natural right- or left-handedness exists, and in most of the cases presenting scars upon both hands in approximately equal numbers, is safe in stating that the person was probably originally left-handed, but learned to use the right hand only after having inflicted many cuts upon it through the use of the left, or, possibly, continues to use the left at times. It may prove that, in some occupations, the habitual use of edge-tools in the left hand may call for a modification of these statements.

### A CASE OF PERIPHERAL POLYNEURITIS FOLLOWING DELIVERY.<sup>1</sup>

BY E. G. OUTLER, M.D.

H. B., age thirty-seven, married, housewife, born in Montreal and living in South Framingham, entered the Massachusetts General Hospital, July 3, 1896.

Her father died of apoplexy and her mother of cancer. Catamenia were normal until the last two months, when there has been no flow. Five healthy children. She had measles and small-pox in her early years. No rheumatism. Touch of bronchitis for years. Never rugged.

Four months ago she was delivered of a still-born child, and three weeks later had "milk leg" on the right side, which gradually subsided; vomiting and loss of weight.

Two months ago, on attempting to walk, found that the right leg was very weak, and a few days after she could not support her weight with the right limb. Severe pain in leg, thigh and foot. Before long the left limb was affected in the same way, with attendant loss of strength and pain. About the same time numbness and tingling in hands and arms appeared, followed by weakness. The grasp of the fingers became impaired, and she dropped things continually. Cannot eat by herself. Sense of touch imperfect in hands and feet. Muscles feel sore and tend to contract, so that knees are flexed. Feet swell at times. No difficulty in speaking. No involuntary passage of urine and feces. No sexual desire. Marked wasting of body. No history of lead, arsenic, alcohol, syphilis or other infective disease.

*Physical Examination* showed her to be poorly developed, emaciated, of a dark, sallow complexion. Pupils equal and reacted. Tongue moist, not coated, swollen and pale. Pulse regular in rhythm, force and volume. No blue line on gums. Face comparatively full and rounded. Lungs and heart normal.

Liver border at fifth space, and extends below costal edge by percussion.

Spleen slightly enlarged, edge felt.

Abdomen flat, no tenderness.

Remarkable pigmentation of skin of the lower part of thorax, abdomen and thighs (which has had no apoplexions). Skin of arms, chest, abdomen and lower extremities dry, and in places the epidermis is peeling off.

Hands pigmented on the dorsal surface.

Knee-jerks absent. No ankle-clonus.

Marked atrophy of all muscles of upper and lower extremities and trunk; wasting of thumb and interossei

muscles pronounced. Grasp exceedingly weak, especially in left hand; coarse tremor of hands.

Electrical reactions showed a slight response of thumb muscles, flexors of forearm, biceps, deltoid and pectorals on both sides, stronger on the right. Greatest impairment of extensors. Almost no reaction in lower extremities; here, also, the extensors are more affected.

Sensation to heat and cold, pain, and in distinguishing blunt from sharp points, fairly good.

Eyes not so good as formerly. Hearing never very good. Not bright mentally.

Thyroid gland apparently of normal size. Nails of toes dry, brittle, cracked and ill-nourished. No loss of hair. No pigmentation of mucous membranes.

Urine: Normal color, acid reaction, specific gravity 1.020, no albumin, no sugar, no sediment, no diazo.

Blood: Red corpuscles, 2,832,000; hemoglobin, 30 per cent.

July 12th. Pain in legs bad at times. Skin improving in color.

August 10th. Unable to straighten the right knee. Pain worse in wet weather. Pigmented scales on belly persist.

August 24th. Walking with little assistance.

September 13th. Under general massage she is steadily improving in strength and color. Brown skin on belly removed by soda wash. Has gained considerable weight.

September 16th. Discharged much relieved.

Möbius was apparently the first to thoroughly investigate puerperal neuritis. His article appeared in the *Münchener Medicinische Wochenschrift*, 1887, No. 9, and contained the description of seven cases, to which he added three in later communications to the same journal in 1890 and 1892. Schintzler, in 1876, and Kast, in 1886, had recorded cases, as had also Imbert-Gourbeyre in 1861, which must be included under this head. Other writers, as mentioned by Mills, *University Medical Magazine*, May, 1893, had described cases of paralysis of single nerves of the lower extremities, most of them of traumatic origin from operative interference, though some of them appear to be true cases of puerperal neuritis.

"Ueber puerperale Neuritis und Polyneuritis" is the title of an exhaustive article by A. Eulenburg in the *Deutsche Medicinische Wochenschrift*, Nos. 8 and 9, 1895, pp. 118-121, 140-6, who gave the whole of the literature up to date and prepared a table of 38 cases with analysis of the same. Clinically he divides the cases into two classes according to their severity, irrespective of their etiology.

(1) A mild localized form most frequently occurring in the arms on one or both sides, particularly in the median and ulnar nerves (brachial type), more rarely in the lower extremities, usually one-sided in the ischiatic nerve (crural or lumbo-sacral type); or, beginning as brachial and becoming crural, and with our present experience having a very favorable prognosis.

(2) A severer, more diffuse or general form, which may have an acute or subacute course, may be ascending or descending, in some cases resembling Landry's acute ascending paralysis, and also implicates the cerebral nervous system to a greater or less extent.

The ordinary causes of neuritis, as alcohol, diphtheria, syphilis, lead, arsenic, typhoid fever, pneumonia, influenza, and so on, in the cases mentioned could be excluded. Eulenburg is inclined to believe that some

<sup>1</sup> Read by invitation, before the Obstetrical Society of Boston, October 20, 1896.

of the cases of neuritis, though only observed during the puerperium, are in reality cases of neuritis of pregnancy, and thinks that the impaired gastro-intestinal functions during the gravid state are the cause of the condition by leading to an auto-intoxication through the formation in the gastro-intestinal tract of some substance, possibly acetone, which is absorbed and causes the neuritis. That it is a toxemic polyneuritis there can be little doubt, but as to the nature of the poison there is no evidence that acetone is the cause of the condition. In many of the cases of puerperal polyneuritis there was a distinct history of fever during the puerperium, as pointed out by George Elder in a valuable paper on "Peripheral Neuritis in Pregnancy," in the *Lancet* of July 25, 1896; so that there is much reason to believe that they were really cases of septicemic neuritis. To quote him:

"Some cases, however, have been described where the puerperium was said to be fever-free, although apparently in few of them was this point specially observed, as the cases only came under the notice of the observers some time after the onset of the disease. In such cases even should it be proved more satisfactorily than at present that the puerperium was fever-free, there is in the process of involution of the uterus, etc., and consequent presence in the blood of a quantity of products of disintegration, a possible cause of poisoning of the nervous system. Similarly, in pregnancy one has in the greater amount of relative changes going on, as a consequence of the growth of the embryo *in utero*, a larger quantity of effete products to be eliminated from the system, and it is probable that this is largely the cause of the neuritis when it is present; for the excretory organs may at times be unable to fully eliminate from the circulation all these products although they do not give any actual signs of being themselves diseased.

"In most of the cases recorded of peripheral neuritis in pregnancy there has been severe vomiting lasting for a considerable time, which has been accepted as the cause of the neuritis by most of the writers. . . .

"That it is closely related to the neuritis there can apparently be little doubt, and this relationship is more strongly brought out by the fact that in several cases of puerperal polyneuritis there had also been excessive vomiting during pregnancy."

The cases reported by Elder, two in number, show that vomiting is not absolutely necessary for the production of neuritis in pregnancy, as it was absent in both.

Recovery from the neuritis has been the result in most of the cases reported — in some tardy, in others rapid. A few remained unaffected by treatment for many months. Several cases terminated fatally.

In regard to treatment, Elder says: "Remembering the fact that the disease may prove fatal, one must be prepared to induce labor before the disease has advanced too far, for as soon as the uterus is emptied there is naturally a tendency to recovery. One would require, however, to be particularly careful in inducing labor to prevent the onset of the slightest degree of septic trouble, which would tend to aggravate the condition, for nearly all the cases of peripheral neuritis have followed on a fevered puerperium. Otherwise the treatment of the condition would resemble that in other forms of peripheral neuritis."

The bibliography is given by Eulenburg and completed to date by Elder in the journals cited.

## Clinical Department.

### A CASE OF SYMPHYSEOTOMY.<sup>1</sup>

BY JOHN B. SWIFT, M.D., BOSTON.

AT eleven A. M. on September 10, 1896, I was asked to see Mrs. A., residing in Dorchester, to determine whether Cæsarean section should be done. The message said that she was in labor at that time.

I got to the patient about twelve, and learned from the attending physician that about one year previous she had been delivered of a child (her first) by craniotomy. The three physicians, who had seen her at that time, had told her that she could not have a living child in the natural way, and that, should she become pregnant again, Cæsarean section would be necessary. When it was known that she was pregnant a second time, the operation was explained to her, and she decided to have it done, but had put off making the necessary arrangements. The present labor had commenced some time during the day before, and he had been summoned at three o'clock this morning. He found the os fully dilated, with the membranes protruding. The head was presenting, but would not descend because of a projecting promontory. During his examination the membranes were accidentally ruptured.

I found the patient to be a slight, thin woman, twenty-six years old, married two years. She said she had always been well and strong, the only sickness she ever remembered being her last confinement; but later she told me that, when a child, she had hurt her back by a fall on the ice, but it had never given her any trouble.

On external examination the pelvis seemed to be well formed, and the measurements by the pelvimeter were: crests  $10\frac{1}{2}$  inches, spines  $9\frac{1}{2}$  inches, external conjugate  $7\frac{1}{2}$  inches. The abdomen was not especially prominent. The head was felt rather more to the right of the median line, the back towards the front, breech at the fundus on the left side. The fetal heart was heard to the left of and below the umbilicus, 130 beats a minute.

The finger introduced into the vagina easily reached the promontory, projecting further forward than normal. The os was fully dilated. The head was above the brim, with the occiput toward the left side. Between the pains the head was movable and extended; but during a contraction it could be felt to flex and become fixed in the grasp of the uterus. The distance from the most prominent point of the promontory to the under side of the symphysis measured just under three and one-fourth inches, and the true conjugate was estimated at about three inches. The pelvis otherwise was roomy. Sweeping the finger around the pelvis and comparing the impression of the pelvic circumference, thus formed, with the estimated size of the child's head, delivery by the forceps or turning did not seem possible.

The question then resolved itself into craniotomy, Cæsarean section, or symphyseotomy. The child being alive, craniotomy was rejected.

The woman having been in labor so long a time with the membranes ruptured; the uterus contracting so firmly; and the probability of the head easily coming through the pelvic brim by having the pelvic circumference increased, led me to believe that symphyseot-

<sup>1</sup> Read before the Obstetrical Society of Boston, October 20, 1896.

omy would be the most favorable operation for both mother and child, and I so expressed myself. Consent was readily given, and she was transferred to a private room in the Carney Hospital. There was no delay, as all preparations had been made at the hospital during the transfer of the patient from her home, instructions being given to the house-officer by telephone.

On arriving at the hospital she was etherized, and the customary antiseptic precautions taken. With the patient in the lithotomy position, a steel male sound was passed into the urethra, and given to an assistant with instructions to hold the urethra on one side. An incision was then made over the symphysis, beginning well up on the mons and extending down to the clitoris, and the tissues divided down to the joint which was easily found. The symphysis was divided from above down by a probe-pointed bistoury, and immediately separated five-eighths of an inch. There was very little bleeding. Putting my finger into the vagina and pressing the head down with a hand on the abdomen, it was seen that the head would enter the brim, but would not come through. The head was strongly flexed with its long diameter in the transverse diameter of the pelvis, occiput to the left. The forceps were applied, one blade over the occiput, the other over the front part of the head, and with moderate traction the head came into the pelvis, the pubic bones separating about one and one-half inches. The forceps were then removed, thinking that I could reapply them to the sides of the head and rotate it, but I was unable to adjust the left blade. They were, therefore, applied as before, and as the head came down it was rotated in the forceps by one hand and easily delivered. The perineum had been torn to the sphincter during the previous delivery and had been repaired after her convalescence. The scar gave way slightly on the right side. It was immediately united by one silkworm-gut suture. This was the only abrasion which I could find in the genital canal. The child, a female, did not breathe at first, but efforts at resuscitation soon established respiration. The measurements of the head were:

Bi-temporal diameter . . . . .	3½ in.
Bi-parietal diameter . . . . .	3½
Occipito-frontal diameter . . . . .	5+
Sub-occipito bregmatic . . . . .	3½
Circumference . . . . .	14½

The placenta was easily expressed during a contraction about ten minutes after the child was born.

There was considerable difficulty in getting the pubic bones together again, but it was accomplished by the aid of two assistants pushing on the sides of the pelvis, the patient's legs being fully extended at the same time. The bones were held in place by a large silk suture passed through them, a wire suture having broken. The incision was closed by deep and superficial sutures of silkworm gut. A corrosive-gauze dressing was applied and a broad band of adhesive plaster passed around the hips. Over all an unbleached cotton obstetric binder was pinned as tightly as possible.

A self-retaining catheter having been passed into the bladder, she was put to bed in very good condition, with the legs tied together, and instruction given that she should be kept on the back with sand bags on either side to prevent motion.

This constrained position proved to be exceedingly annoying, and accounted, I think, for the rise of tem-

perature which took place during the two days following the operation. During the second night it was found that the catheter had come out of the bladder. It was not replaced, as she was able to empty the bladder herself.

On the fifth day the dressings were changed, and, as the incision had healed, the sutures were removed. There was a rise of temperature the day following which could not be accounted for; but it was soon evident that an abscess was forming. This was opened through the original incision, and was caused, I think, by drawing in septic material when removing the sutures. Otherwise, the convalescence was uneventful. The milk-supply was abundant from the first, and the child was nursed as in any case.

She was kept in bed four weeks. On getting up she declared she could walk as well as ever, and it was impossible to detect any motion or separation at the symphysis.

Conclusions should perhaps not be drawn from one case, but the impression which I had formed from my reading, namely, that symphyseotomy is not the operation of election, was confirmed. I mean given a case of contracted pelvis where the question arises between induced labor, Cæsarean section and symphyseotomy, I think Cæsarean section should be done for the following reasons:

The child is at full term.

It can be extracted from the uterus as readily, or even more so than with symphyseotomy.

In induced labor the child is premature, which is an added risk to its living.

In symphyseotomy there is great danger of lacerating the tissues. There is the possibility of the symphysis not reuniting, and thus leaving the woman in a more or less crippled condition.

Greater care must be exercised in the after-treatment, as there is more danger of infecting the wound in symphyseotomy, owing to the difficulty, or almost impossibility of preserving asepsis.

As for the operation itself, to any one familiar with abdominal surgery, Cæsarean section would be the easier operation. To be sure, I found the division of the symphysis to be as easy as opening the abdomen and uterus, but the extraction of the child, and afterwards getting the parts together and placing the deep sutures was certainly harder and took more time than the same things take in Cæsarean section.

Again, symphyseotomy must not be done until the os is fully dilated, which may mean that the patient has been subjected to a great amount of suffering, and is in poor condition to stand the operation; whereas Cæsarean section is done early in labor, or even before labor has begun.

The place for symphyseotomy seems to be when the choice comes between it and craniotomy on the living child.

All statistics show that for Cæsarean section to be successful it must be done early. Therefore, when labor has been going on for some time, and it is evident that the child cannot be delivered by forceps or turning, symphyseotomy should be done before craniotomy, unless the passage through the pelvis is too small, for there is a limit to the separation of the bones, beyond which it is not safe to go. Where the conjugate is below two and one-half inches symphyseotomy should not be done.

In cases of impacted head from faulty presentation,

or absence of rotation, forceps having failed, symphyseotomy should be tried before craniotomy.

As to placing an upper limit, so to speak, that is, saying that with a certain amount of contraction a certain operation should be done, does not seem reasonable. It is a question of judgment, combined with skill in diagnosis and ability to operate. The relation between the size of the pelvis and the size of the head must be considered. With a large head and a very slight contraction, delivery might be prevented or call for operation in one case, while in another, with the same amount of contraction, but a smaller head, it would be easy.

The importance of pelvimetry cannot be too strongly urged. I believe that careful measurements should be made in the case of every primipara under our care, or in any case with a history of difficult labors. Also, in the later months of pregnancy, in all cases, examinations should be made to determine the size of the head in its relation to the pelvis.

#### A CASE OF GENERAL SEPTIC PERITONITIS FOLLOWING ABORTION.

TREATED BY PERITONEAL AND INTESTINAL DRAINAGE, RESULTING IN RECOVERY.

BY ALBERT H. TUTTLE, M.D., CAMBRIDGE, MASS.

SUNDAY, July 19th, I was called to see Mrs. S. P. C., of Somerville, by Dr. S. M. Bump, her attending physician.

She was twenty-three years of age, married five years, II-para, and had enjoyed good health to the time of the present sickness.

Dr. Bump stated that he was called to see the patient July 15th, that he found her suffering from the effects of abortion (probably criminal), with retained placenta and severe metrorrhagia; the pulse was weak and rapid, 120 beats to the minute. He applied a tampon.

On the 16th he removed the tampon, curetted the uterus, and packed it with iodoform gauze. The patient came out of ether well, the pulse dropped to 96 beats per minute, and vomiting occurred to some extent. On the 17th the patient vomited continually; the vomitus assumed a stercoraceous character; the pulse reached 130; there was no pain; the temperature taken by the axilla was normal. Glycerine and turpentine in water were administered per rectum, and sulphate of magnesium in conjunction with pills of aloes, strychnia and belladonna, by mouth; but without effecting a movement of the bowels. Tympanites set in and steadily increased. The case grew gradually worse, and he called counsel. As the bowels still remained obstinately closed, the patient was becoming very weak, and the case was assuming a most desperate character, they determined to try the effect of a dose of metallic mercury, and eight ounces were given on the 18th. The bowels still refused to act.

On the 19th I found the patient suffering intensely from thirst; the abdomen was swollen and tympanic, tender to the touch, and uniform in contour; the tongue red and dry; the mind blunted; the decubitus dorsal with the legs extended full length. There was great restlessness and continual low moaning. The pulse was feeble and hard to count; the skin covered with

cold perspiration and clammy to the touch; the respiration quick and shallow; and altogether the appearance was that of a very sick woman.

Some time ago I read of a case in many respects similar to this one, where the gut was opened and drained, with recovery (I cannot recall the name of the writer); and a short time later Dr. Godfrey Ryder reported another successfully treated in the same manner. I determined to try the same method of treatment, and opened the abdomen on the left side. My intention was to perform a left lumbar colotomy, but finding the bowels much displaced, I inserted gauze drainage, after first removing numerous clots of fibrin, and proceeded to the right side. There I opened the abdomen over the caput coli, drew the great gut out and sewed it to the edge of the peritoneal wound, after which I made a very small opening in the bowels, which was followed by the escape of gas. Gauze dressings were applied and the patient put to bed. She was in a collapsed condition, and one-tenth of a grain of strychnia was given hypodermically.

The outlook was not very hopeful; however, she rallied from the operation, and within twenty-four hours passed flatus by the rectum. The abdomen became less distended, and the patient was less restless.

Forty-eight hours after the operation I again saw the case with Dr. Bump, and recommended a quinine enema. This was followed by a large fecal movement, unformed but of thick consistency.

At regular intervals strychnia, digitalis, strophanthus and belladonna were given, together with large quantities of alcoholic stimulants. The bowels were daily kept open by rectal enemata.

From both wounds there was a considerable discharge of fluids for several days. The fistula closed spontaneously, and by the end of the third week the patient made a good recovery.

On the 5th of August metallic mercury was passed by the rectum for the first time, eighteen days after its exhibition. The mercury came away in small quantities during the succeeding week.

The case was in my opinion one belonging to a class where fatal issue is almost inevitable, and the result must be of considerable value in testimony of the virtue of intestinal drainage in cases of paralysis of the gut following septic infection.

### Medical Progress.

#### REPORT ON SURGICAL PROGRESS.

BY H. L. BURRELL, M.D. AND H. W. CUSHING, M.D.

(Concluded from No. 24, p. 597.)

#### THE OBJECTS AND LIMITS OF OPERATIONS FOR CANCER.

CHEYNE,<sup>22</sup> in an article on the above subject, gives the statistics of a large number of operations, and states that the only larger statistics which, so far as he knows he has omitted, are 12 cases of Kronlein, with three deaths. As far as the author knows, they have not been published, with the exception of two, one of which was well at the end of seven years. To include this one and not the others would vitiate the statistics. The author states that he has also

<sup>22</sup> Lancet, 1898, vol. i, p. 677.

come across references to the following cases, but has not been able to find full details, and probably they are not published in detail, namely:

Marchaud. Partial extirpation of the pharynx; died from pneumonia on seventh day.

Trelat. Cancer of tonsil and pillars of fauces; recovered.

Verneuil (mentioned by Castex). Epithelioma of tonsil, soft palate, pharynx and floor of mouth; recovered (recurred?).

Hueter. Sarcoma of tonsil; death in three weeks from pneumonia.

Hahn. Removal of epiglottis; recurrence in three months (referred to by Schotz in *Centralblatt für Laryngologie*, No. 6).

Fischer (referred to by Keitel). Tumor of the whole posterior wall of the pharynx; recovered.

König. Three cases (referred to by Keitel). Recurrent carcinoma of posterior wall of pharynx; recovered. Carcinoma of tonsil extending on to pharynx; died from septic pneumonia. Carcinoma of tonsil; died from septic pneumonia.

Billroth. Lympho-sarcoma of tonsil, very extensive, vagus divided; death from edema of the lungs.

Von Bergmann refers (*Deutsche Medicinische Wochenschrift*, 1883) to a case where he removed a large piece of the lower jaw, tonsil, and almost the whole of one side of the pharynx, but does not state result.

Gallardo. Extirpation of cancerous tumor of palate and tonsil in a male aged forty; rapid recurrence in glands in one month.

#### THE RELATION OF TRAUMA TO MALIGNANT TUMORS.

Ziegler<sup>20</sup> reviews the facts concerning the relation of single and repeated trauma to malignant tumors. His paper is based on the statistics of the last five years in the surgical clinic in Munich. It includes 171 cases of carcinoma of the breast, 44 of the lips, 37 of the scalp, 46 of the cavity of the mouth, 9 of the penis, 9 of the extremities, and 12 of the alimentary canal; 34 sarcomas of the head and neck (excluding the jaws), 24 of the jaws, 29 of the mammary gland, 3 of the abdominal wall, 6 of the kidneys, 8 of the testicles, 23 of other parts of the body, and 44 of the extremities. In all there were 328 cases of carcinoma, 117 in men and 211 in women; and 171 sarcomas in 81 men and 90 women. After deducting the tumors of the mamma and genital organs, there were 108 tumors in men and 102 in women. In carcinomas there was a history of single traumas 55 times; 92 times there had been chronic conditions of irritation. In sarcomas 35 times a single trauma was noted, and 32 times (including warts) chronic irritations were at fault. Although some cases of single traumata seem to stand in doubtful relation to the formation of the growth, the author believes, as a rule, the new formation has been brought about by the injury, basing his judgment on the continuation of the pains and swellings after the trauma and which go insensibly into the formation of the tumor.

Such a high percentage for the single traumata, 25 per cent., and for the continuous irritation, 18 per cent., leads Ziegler to adopt Virchow's irritation-theory. In the production of tumors, every factor should be taken into account, and the influence of

traumata must be considered, no matter what theory of tumor-formation one accepts.

The subject is of special importance when the relation to medico-legal proceedings and to accident insurance is considered.

#### FRACTURE OF THE LEG TREATED BY THE AMBULATORY METHOD.

Bardleben's treatment of fractures has been discussed by the Surgical Section of the College of Physicians of Philadelphia.<sup>20</sup> Bardleben claimed in 1894, that the results by his method were better than those by the usual method. There was less atrophy, less stiffness of the joint; union was more rapid, and the patient could sooner resume his avocation.

Dr. Edward Martin notes that in no instance had he had a bad result, that healing was prompt. Plaster-of-Paris was at once applied, and the patient walked about, first, with crutches, next with crutch and cane, and last with a cane. He could not say that healing was more rapid, or that there was less atrophy than by the usual method of treatment. He thinks that it is difficult to properly support the parts so that the weight of the body is carried by the plaster and not by the bones; that this method will not be a popular one for complicated fractures or simple fracture of the femur; that for simple fracture of the leg below the knee reduction under ether, plaster-of-Paris bandage, and omission of confinement in bed will be a common method of treatment. He has so treated twenty cases, with no bad results.

Dr. Pilcher described his results during the preceding year. Of simple fracture very few were kept in the hospital more than one or two days. Of compound fractures the length of time patients were kept from their feet was in the worst case one month. The ultimate results were satisfactory. He called attention to the fact that, although the patient is allowed to walk early with his splint, the time for omission of apparatus and allowing the full weight of the patient to be supported by the unguarded fracture is not correspondingly brief. Sufficient time must be allowed for the fracture to become firm, otherwise a later deformity will recur. This is especially likely to occur in cases of oblique fracture. He also emphasized the liability to pressure necrosis and sloughing at those points where the weight of the body is transferred to the walking splint. The bandages should therefore be carefully applied and the patient carefully watched. If symptoms of pressure necrosis appear, the bandage should be at once removed. It must not be assumed that because the patient is up and about that he requires no especial supervision.

Dr. Ashhurst thought that it was essential in the treatment of fractures to immobilize the nearest articulation above and below it. This condition could be fulfilled in cases of fracture of the leg, but not so well with fracture of the thigh. He also corroborated what Dr. Pilcher stated in regard to deformity occurring if the limb was used without support before sufficient time had elapsed for firm union to occur. This has happened when the fracture seemed firm. He recommended the ambulatory treatment for cases of delayed union. He would employ it in cases of fracture when union was well advanced, exceptionally only in recent cases, and even more exceptionally in fractures of the femur.

<sup>20</sup> Munch. med. Woch., 1895, No. 27, u. 28; American Journal of Medical Sciences, April, 1896, p. 484.

<sup>20</sup> Annals of Surgery, 1896, vol. xxiii, p. 462.

Dr. Frazier described Professor Bardeleben's method as seen in actual use at the Charité Hospital in Berlin. The plaster-of-Paris was applied at once on the admission of the patient to the hospital. They walked first with crutches, then with a cane, and finally unaided. No pain was complained of. One point was emphasized by Bardeleben, namely, that the ankle should be strongly flexed so that the patient should always walk on the heel. He claimed that stiff joints, muscular atrophy, delirium tremens and other complications were not met with.

Dr. Packard stated that his study of anatomy, and especially of artistic anatomy, would lead him to believe that it is in a minority of patients that the contour of the leg just below the knee would give the support sufficient for such treatment.

Dr. J. Ewing Mears doubted if this method of treatment would enable a patient, whose work required him to be on his feet, as a postman or a hod-carrier, to resume this occupation with safety any sooner than by the usual methods.

Dr. J. B. Roberts spoke approvingly of the method, and thought it would become a routine method, at least for fractures below the knee.

The concluding statement of the discussion by Drs. Martin and Pilcher was that the method is not a universal one, that it is applicable to certain cases. It permits patients, perhaps not hard manual laborers, to attend to their business sooner and avoid four or five weeks of bed treatment. It requires supervision and technical knowledge as well as the method now in use.

#### FORMALIN CATGUT.

Dr. B. F. Curtis<sup>21</sup> reports the results of his investigation of catgut prepared with formalin, a method which has been recently advocated and employed by some surgeons. The advantages claimed for the method are that it yields a sterile suture material, and that the catgut is so hardened by formalin that it is not injured by boiling.

The method employed by Dr. Curtis consisted in soaking the gut (wound loosely on spools) twelve to fifteen hours in a solution of formalin, one part, and water, six parts. It was then boiled in water ten to fifteen minutes, and was ready for use. It was kept in a one-per-cent. solution of formalin when not in use. By this method the catgut was found to be satisfactorily sterilized; but it was also noticed that it was much shortened by the boiling and considerably weakened. Some specimens lost as much as fifty per cent. of their strength.

#### A NEW SUTURE MATERIAL.

Dr. L. Arangino<sup>22</sup> has prepared sutures and ligatures from the parietal peritoneum of cattle or horses. This is dissected off, cut into strips of various widths, twisted into cords, and dried for two to four days. The strands thus obtained are freed from fat by soaking in ether and are made sterile by soaking in a two-per-cent. solution of corrosive sublimate in alcohol. They are preserved in a weaker solution of the same character. He claims that these sutures are easily prepared, are strong, are absorbed without difficulty, and are easily sterilized. They are certainly less liable to contain bacteria or other micro-organisms than the submucous layer of the intestine which is the com-

mon material used for "catgut." Arangino also sterilized his material by placing it in oil of juniper for ten minutes, heated to boiling and preserved it in absolute alcohol.

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## Reports of Societies.

### THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

REGULAR Meeting, October 20, 1896, the President, DR. JAMES R. CHADWICK, in the chair.

DR. E. G. CUTLER reported, by invitation,

#### A CASE OF PERIPHERAL POLYNEURITIS FOLLOWING DELIVERY.<sup>1</sup>

DR. W. T. COUNCILMAN said that the neuritis of pregnancy is very obscure from an etiological point of view. It is probably a form of toxemia due to defective metabolism, and this view seems more probable than that of infection. A more thorough study of the urine might help to clear up the etiology of this affection. In comparative pathology conditions analogous to eclampsia are found, with evidence of some toxemia without bacteriological infection. It has been thought by some that this poison was formed in the placenta. Injections of an infusion of the placenta in these cases have been made, however, without results.

DR. G. J. ENGELMANN referred to a case seen in St. Louis, of peripheral neuritis of pregnancy with numbness and lack of sensation in the left arm. Pregnancy and labor are analogous to menstruation and as we have functional disturbances and neuritis in the latter, so we may in the former.

DR. C. E. STEDMAN spoke of a young woman who was brought into the City Hospital paralyzed, who

<sup>21</sup> Transactions New York Surgical Society, November 12, 1896.

<sup>22</sup> La Clinica Chirurgica, August, 1896.

<sup>1</sup> See page 620 of the Journal.

died soon after delivery. Here the autopsy was negative, and the case may possibly have been one of severe neuritis.

DR. S. L. ABBOT asked if it had occurred to Dr. Cutler that the remarkable neuritis in his most interesting case was possibly due to the grippé influence, which has shown itself so much within the past four years. The neuritis of influenza was sometimes most eccentric and alarming. He mentioned a case which had come under his own observation last year, of a young woman who had been the devoted nurse of her own brother for months, during a protracted illness growing out of an attack of influenza, which developed into a limited, creeping pneumonia of the upper part of the lower lobe of the left lung. Subsequently tuberculosis became manifest over the affected region, and caused his death. During his illness he had several times a recrudescence of grippé with the usual symptoms.

One morning, on making his regular visit, Dr. Abbot found the sister suffering from symptoms which seriously alarmed her and her friends, leading them to believe she had had what they called a "shock." There was a peculiar affection of the whole right side of the body, including the face. She complained of greatly diminished sensation, much difficulty in walking, and diminished power in her right arm or hand, so that she could hardly hold a teaspoon between her fingers for a few moments without dropping it. Occasionally a sharp pain came on, shifting from place to place quite suddenly, dying away at one point as it developed in another, and accompanied by a good deal of tenderness on pressure over the painful region. When Dr. Abbot first saw her the pain was about the right foot and ankle. Suddenly the patient complained of a sharp pain in the back of her right thigh while the pain below gradually subsided. The right side of the face had a peculiar expressionless look, and seemed a little fuller than the left, as if the muscles had lost their tension, although there was no edema, nor actual swelling. The surface was of the same color as that of the left. The upper eyelid drooped a little, but could be raised at will, and the pupil acted under the influence of light exactly like the left. The tongue was protruded directly forward without difficulty. The patient described the general feeling of the whole right side as "a sort of numbness," with here and there the pain before spoken of. She walked slowly and timidly, feeling she might fall at any moment. Sensibility to the touch did not seem much blunted in the limb, and the knee-jerk was normal. In eating she was much embarrassed by the clumsy action of the muscles of the right side of her mouth which obstructed the free movement of the mass she was chewing. The whole condition of her right extremities was that of clumsiness in movement rather than paralysis. Her sensations in the right side of her face were in accordance with a similar condition there. There was no headache or aphasia, and the special senses were not affected.

Taking into consideration the fact that for months she had been by her brother's bedside most of the time, Dr. Abbot said he could not help feeling that the symptoms were due to the prevailing epidemic, of which she had had a slight attack before, and were caused by an extraordinary neuritis, probably of a temporary character. They were not violent enough to indicate a destructive process going on

in the nerves affected, or that they were of a central origin. She was therefore encouraged by Dr. Abbot to believe they were of a transient nature. The result justified the prognosis, for after ten days there was no trace of the disability which had caused her so much alarm and inconvenience, although her general strength was for a time considerably impaired.

DR. C. W. TOWNSEND said he had attended a patient in two pregnancies, in both of which during the latter two or three months, there was much pain, tingling and lack of sensation in both hands and forearms. The pain was so severe as to interfere with sleep, and the loss of tactile sensibility was such as to make it impossible for the patient to pick up a small object, or use a needle. After delivery the symptoms rapidly diminished, and disappeared in the course of two weeks.

DR. J. R. SWIFT reported

#### A CASE OF SYMPHYSEOTOMY.<sup>2</sup>

DR. G. HAVEN was glad to hear the reader say that the Cæsarean section was an easier operation than symphyseotomy, that it was less dangerous for both mother and child, that there was no more shock, and that the danger of a loose symphysis or deep abscess is avoided. He should always prefer the section and in any event would never perform craniotomy on the living child.

DR. C. M. GREEN congratulated the reader on the success of the operation, which was, he believed, the first of its kind in Boston.

DR. G. J. ENGELMANN said he had had no practical experience with the subject, but having followed the clinic of Morisani, he could not agree with the reader or Dr. Haven. Morisani has had a large number of cases with most excellent results by symphyseotomy, and this, too, without the use of suture for the symphysis. The Galbiati knife is used. The results he believed were better than by Cæsarean section.

DR. G. HAVEN said that the mortality in Cæsarean section he had found to be only three per cent., throwing out improper cases.

DR. W. L. BURRAGE believed that the injury to the sacro-iliac joint ought to be taken into account. In the dissecting-room he had found that this was considerable. In New York he had seen the operation done by Grandin. Everything went smoothly but he was impressed with the greater difficulty as compared with Cæsarean section.

DR. A. WORCESTER said he was opposed to the operation from theoretical grounds, and from fear of the danger of non-union of the symphysis. He has had two patients who have suffered severely from separation of the symphysis in hard forceps deliveries, one of these being unable to walk for a year, the other incapacitated for some time and suffering much pain. He could not bring himself to run the risk of this result.

DR. W. T. COUNCILMAN asked whether an accidental separation of the symphysis would not be likely to be worse than one caused by the knife. In the former case, the separation not being noticed and the parts not being brought together by proper bandaging, union would not be as likely to take place.

DR. EDW. REYNOLDS said that personally he should prefer Cæsarean section to symphyseotomy under favorable conditions. Cæsarean section has been and is

<sup>2</sup> See page 621 of the Journal.



to-day very fatal after prolonged labor where the uterus is exhausted, or already in a septic condition. In those cases Cæsarean section is not to be considered, but the choice is between craniotomy and symphyseotomy. He would prefer the latter.

DR. GEO. HAVEN said that the general mortality in Cæsarean section, not especially of selected cases, is about 30 per cent.

DR. SWIFT, in closing, said that it was hardly fair to compare the two operations. Where the choice is made at the beginning of the labor or before, the results from Cæsarean section are most favorable. Symphyseotomy, however, is never done till the os is fully dilated after a labor generally long, and there is always danger of bruising.

DR. C. W. TOWNSEND reported the case of a family showing the

#### INFLUENCE OF HEREDITY ON MULTIPLE BIRTHS.

In the first generation the father was a twin. Two of his daughters had twins. A third married a man whose sister had given birth to female twins, one of which twins presented her husband with triplets.

This marriage of the third sister to the man with twin tendencies did not result in multiple births, but a daughter gave birth to seven children in four pregnancies; that is, three pairs of twins and one single child. The tendency to multiple births was increased in this case by the fact, that she like her mother had married into a twin-producing family, for her husband's mother had twin girls and her husband's two brothers each was the father of twins.

DR. W. T. COUNCILMAN remarked that the tendency to multiple births has generally, as in the case reported, been transmitted through the female.

#### AMERICAN PUBLIC HEALTH ASSOCIATION.

TWENTY-FOURTH ANNUAL MEETING, BUFFALO, N. Y.,  
SEPTEMBER 15-18, 1896.

(Concluded from No. 24, p. 603.)

#### THIRD DAY. — MORNING SESSION.

MAJOR CHARLES SMART, Surgeon of the U. S. A., Washington, D. C., Chairman, read the

#### REPORT OF THE COMMITTEE ON THE POLLUTION OF WATER-SUPPLIES,

in which he referred to the bacteriological convention held in New York City and the work accomplished by it, and said that when the standard methods of this convention were in the hands of the bacteriologists of this country, the committee will then be in a condition to define its lines of action for effecting an organization for co-operative work, as suggested at Montreal.

DR. PETER H. BRYCE, of Toronto, Chairman, presented the

#### REPORT OF THE COMMITTEE ON RIVER CONSERVANCY BOARDS OF SUPERVISION.

The Committee was not as yet prepared with such data regarding individual cases of pollution to present practical suggestions with reference to such a board for any particular stream, but desired, by laboring in conjunction with the Committee on Pollution of Streams, and various engineering associations, to

collect material which might give to the Committee's report in another year some practical value.

DR. CHARLES N. HEWITT, of Red Wing, Minn., as Chairman, presented the

#### REPORT OF THE COMMITTEE ON PROTECTIVE INOCULATIONS IN INFECTIOUS DISEASES.

DR. W. JOHNSTON, of Montreal, read a paper on  
THE SERUM TEST FOR TYPHOID FEVER.

The author demonstrated a modification of Vidal's method of serum diagnosis in this disease. He considers the test very reliable from a diagnostic point of view, and thinks it will prove of considerable value for public health work, and that it will have a tendency for physicians to more frequently and promptly report their cases.

#### PROPHYLAXIS OF TYPHOID FEVER,

was the title of a paper by DR. JOHN E. WOODBRIDGE, of Cleveland, O.

Typhoid fever was characterized as a water-borne disease, and every attack was considered the child of a previous one and was *prima facie* evidence that the victim had eaten or drunk unsterilized human excrement or some of the products thereof. The Government of the United States will not have discharged its whole duty to the people, will not have attained the zenith of its greatness, until through a Department of Public Health, aided by wise legislation, it has taken every possible precaution to protect the health and foster the highest physical development of her citizens, by guarding well the purity of the air they breathe, the food they eat and the water they drink.

DR. F. C. ROBINSON, of Brunswick, Me., read a paper in which he spoke of

#### THE PRACTICAL USE OF FORMIC ALDEHYDE AS A DISINFECTANT.

DR. E. A. DE SCHWEINITZ, of Washington, D. C., demonstrated and exhibited a convenient lamp for generating formaldehyde gas.

DR. J. J. KINYOUN, of Washington, D. C., followed with a preliminary note on the use of formaldehyde for room and car disinfection. His results so far obtained from its use were very gratifying. Dr. Kinyoun also exhibited and described an excellent apparatus of his own design for generating this gas.

DR. A. R. ERDOZAIN, of Mexico, then read a paper on

#### THE PROPHYLAXIS OF PALUDISM,

and DR. A. GAVINO, of Mexico, one on

#### PALUDISM IN THE STATE OF MORELOS AND ITS PROPHYLAXIS BY SANITARY MEASURES.

DR. JUAN MULDSO, of Mexico, presented a paper on

#### PUBLIC HEALTH IN TABASCO.

He presented the following conclusions: (1) The sanitary condition of Tabasco in general is good. (2) Paludism is the principal disease, but it is satisfactorily treated. (3) Yellow fever is not endemic; it occurs in isolated cases, being generally imported and not finding a good soil for its propagation. (4) Isolation and other hygienic measures have successfully prevented propagation of the disease. (5) Natives

are not as easily attacked by yellow fever as foreigners are, and this immunity reaches people accustomed to the climate, who have lived there for many years. (6) The climatological conditions notably modify the clinical history of certain diseases, among which forcibly calls our attention is the benign course of septicemia.

#### THIRD DAY. — AFTERNOON SESSION.

DR. J. J. KINYOUN, of Washington, D. C., Chairman, presented the

#### REPORT OF THE COMMITTEE ON THE CAUSE AND THE PREVENTION OF DIPHTHERIA.

The Committee recommends the following:

(1) That there should be uniform rules and regulations adopted by all the States and provinces for the prevention and control of diphtheria. The several governments should assume the responsibility and act in unison in preventing the spread of the disease from one country to another, and assume authority over inter-provincial and inter-state communication.

(2) That it should be the duty of the health authorities to provide facilities for determining the diagnosis in all suspected cases by the establishment of inexpensive laboratories for each health jurisdiction. To agree upon a system and means of transmission of material for diagnosis through the mails.

(3) Compulsory notification of all suspected cases and the abolition of the terms "croup" and "membranous croup," unless diphtheria has been excluded by culture and microscopic examination.

(4) Compulsory isolation of all cases, domiciliary or in hospital until the recovered cases show the absence of the diphtheria bacillus.

(5) That the medical inspection of schools should be inaugurated under the direction and supervision of the health authorities, by making daily inspections in the larger cities of all school-children for the detection of infectious disease. (The plan advocated by Dr. S. H. Durgin, of Boston, at the last meeting of the Association, was highly commended.)

(6) School buildings, books, etc., should be subjected to a reliable method of disinfection at least once per month, and oftener if suspected of being infected.

(7) The early treatment with antitoxin of those ill with diphtheria, the administration of preventive doses to those who have been exposed to infection and have the bacilli in their throats.

(8) Prompt and effective methods of disinfection of infected articles and apartments, to be carried out under the supervision of the health authorities.

DR. M. MARQUEZ, of Mexico, contributed a paper on

#### DIPHTHERIA IN CHIHUAHUA.

He said diphtheria was one of the infecto-contagious diseases which was most observed in Chihuahua, and in such a degree that it sometimes caused a panic among families. The author lays down twenty-four rules to be carried out to prevent or avoid the spread of the disease.

#### BACTERIOLOGICAL DIAGNOSIS AS COVERING THE ADMISSION AND DISCHARGE OF PATIENTS IN DIPHTHERIA HOSPITALS,

by DR. E. B. SHUTTLEWORTH, of Toronto.

The isolation hospital at Toronto was established in

1891, and up to June 30th last, there were admitted 1,690 patients said to be suffering from the disease. Diagnosis by bacteriological methods was begun in February, 1895, and since July of that year, the discharge of patients had also been governed by this means of investigation. The statistics for this period covered 565 cases, and when compared with those for the preceding time, afforded an opportunity for ascertaining the practical value of bacteriology when applied to the purposes indicated.

DR. CHARLES N. HEWITT, of Minnesota, presented the

#### REPORT OF THE COMMITTEE ON CAUSES AND PREVENTION OF INFANT MORTALITY.

DR. S. GARCIADIEGO, of Mexico, followed with a contribution on the

#### MORTALITY OF CHILDREN, ITS CAUSES AND MEANS OF DIMINISHING IT.

The speaker classified the causes of mortality of children under three heads: crime, carelessness and ignorance. The author believes that the mortality among children can be diminished by the institution of lying-in hospitals or obstetrical departments, by which means it has been proved that infanticide nearly disappears; and by establishing orphanages and homes for foundlings under the care of the government, and also under the protection of the public beneficiary, and under the care of religious people, and especially the parishes. In each of these asylums a limited number of children should be allowed in order to be properly cared for and attended to. For the feeding of infants in these institutions, the mother's milk should be replaced by that of the she-goat, or other nearly as proper as the former, using the utmost care in the cleansing of bottles. Mothers who abandon their children should be severely punished.

#### THIRD DAY. — EVENING SESSION.

DR. FELIX FORMENTO, of New Orleans, presented the

#### REPORT OF THE COMMITTEE ON THE USE OF ALCOHOLIC DRINKS,

which was substantially that presented last year at the Denver meeting.

DR. ALBERT L. GIBON, of New York, read a paper on

#### THE BICYCLE IN ITS SANITARY ASPECT.

The author criticised the posture and saddles used by riders of the bicycle. After presenting arguments for and against the bicycle, he ventured the prediction that a light three or four wheeled vehicle, impelled by some easily managed motor, inexpensive enough to be generally available, would be the means of progression for pleasure purposes in the future, covering long distances without fatigue, permitting sight-seeing and outdoor exposure without labor, and adding the charm of companionship and participated enjoyment, while the rational instrument of exercise for exercise's sake alone, would ever be a pair of sturdy, human legs.

DR. H. L. CHASE, of Brookline, Mass., read a paper on

#### PUBLIC BATHING ESTABLISHMENTS,

and gave a description of the new public bath in Brookline.

DR. W. H. TOLMAN, of New York, gave an illustrated lecture on

PUBLIC BATHS.

DR. CARLOS SANTA-MARIA, of Durango, Mexico, read a paper on

THE PART THAT PUBLIC INSTRUCTION SHOULD PLAY IN THE WAY OF PRECAUTION AGAINST CONTAGIOUS DISEASES.

It was a plea for the general teaching of the elements of hygiene in the public schools.

FOURTH DAY.—MORNING SESSION.

At this session the following papers were read:

REPORT OF THE COMMITTEE ON THE RELATION OF FORESTRY TO PUBLIC HEALTH,

by PROF. R. C. KEDZIE, of Lansing, Mich.

REPORT OF COMMITTEE ON TRANSPORTATION OF DISEASED TISSUES BY MAIL,

by DR. HENRY MITCHELL, of Trenton, N. J.

ON STATISTICS OF VACCINATION AND MORTALITY FROM SMALL-POX IN THE CITY OF MEXICO, 1879-1895,

by DR. JOSE RAMIREZ, of Mexico.

DR. A. N. BELL, of Brooklyn, N. Y., read a paper on

DRUNKENNESS,

which he considered as a vice, and said that it should be so treated.

DR. F. C. VALENTINE, of New York, read a paper on the

PROTECTION OF THE INNOCENT FROM GONORRHEA.

He said that if justification were needed for the discussion of this matter, it could be found in the statistics of the German Empire for 1894. These show that of the women who died of uterine or ovarian diseases, 80 per cent. were killed by gonorrhea. They further show that of children hopelessly blind, 80 per cent. went into a life of darkness from gonorrhea. Gonorrheal patients should be educated in incontrovertible facts, the physician ever choosing terms within the range of their intelligence.

Several other papers on the programme were read, some of them by title.

The following officers were elected for the ensuing year: President, Dr. H. B. Horlbeck, of Charleston, S. C.; First Vice-President, Dr. Peter H. Bryce, of Toronto; Second Vice-President, Dr. Ernest Wende, of Buffalo, N. Y.; Treasurer, Dr. Henry D. Holton, of Brattleboro, Vt.; Secretary, Dr. Irving A. Watson, of Concord, N. H.

Place of meeting, Philadelphia, 1897.

NUX VOMICA IN THE TREATMENT OF PSORIASIS.—Luton<sup>1</sup> employs extract of nux vomica in stubborn cases in which arsenic has been of no service. He gives three-quarters of a grain daily, at the same time prescribes effervescent baths and the application of a 1 to 1,000 ointment of corrosive sublimate and vaseline.

<sup>1</sup> Belgique médicale, 1896, No. 33; Wiener klinische Rundschau, October 25, 1896.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, DECEMBER 17, 1896.

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THE MASSACHUSETTS HEALTH REPORT.<sup>1</sup>

IN its twenty-seventh annual report the State Board of Health continues its long and remarkable record of most excellent work.

The duties of the Board, as defined by the statutes, have not only been increased but have also been changed in their character since its establishment. At that time the work of the Board, as set forth in the organic law of 1869, was entirely of an advisory nature.

The first act of the Legislature giving to the Board executive powers was the Offensive Trades Act of 1871, whereby the Board was authorized, after due notice and hearing, "and if, in the judgment of the Board, the public health or the public comfort and convenience so required," to order parties to cease and desist from further carrying on such trades or occupations.

Executive power so great that some members of the Board were afraid to use it was not given to what was then a purely advisory and supervisory Board without objections, protests and appeals to the courts. But through the wisdom and faithfulness of the Board, the law has stood, and its beneficent influence has been felt throughout the State for a quarter of a century. In Brighton alone, under it, nearly fifty slaughter-houses were closed, sixteen by summary orders of the Board soon after the law was passed, and the last five early in 1875.

By an act of 1878 authority was given to the Board to have general supervision of water-supplies and to investigate the pollution of them and its causes. It was also empowered to issue orders for the prevention of such pollution. This act was repealed in 1884; and in 1886 another statute was enacted, the scope of which was much broader and more effective in its operation, since it not only authorized the

<sup>1</sup> Twenty-seventh Annual Report of the State Board of Health of Massachusetts. Boston: Wright & Potter Printing Co., State Printers, 15 Post-Office Square. 1896.

Board to make experiments and investigations in the line of water and sewage purification, but made it incumbent upon all cities, towns, corporations, firms and individuals to seek and obtain competent advice before introducing systems of water-supply and sewerage. Liberal appropriations were provided for carrying out the provisions of this law.

In 1882 an act was passed to prevent the adulteration of food and drugs and conferring on the Board the authority to enforce the same. Under this law 67,756 samples of drugs and food, including milk, have been examined by the chemists of the Board; 1,131 complaints have been entered in court; and 1,028 convictions have been secured, with fines of \$24,176. During the past year, 7,809 samples were examined with 92 prosecutions and 86 convictions.

The Board also has co-ordinate power with local boards of health in the prevention of the spread of contagious diseases, and may assume all the powers of any local board of health if, in the opinion of the Board, the local board fails to do its duty. This enormous executive power, so far as we are informed, has never been used, as the very fact of the certainty of its use if required has been always sufficient to bring a negligent board promptly to the mark.

Other acts of minor importance have from time to time been enacted increasing gradually the executive functions of the Board, while its advisory and supervisory duties have also been much enlarged.

No serious epidemic occurred in the State during the year. Diphtheria, scarlet fever and typhoid fever showed a lessened mortality. Only one case of small-pox (imported) was recorded and no death. Malarial fever appeared in two new places, at North Saugus and Uxbridge. The Board has continued its advisory work in the prevention of pulmonary consumption; and its office work has very much increased through the distribution of its antitoxin to local boards of health, hospitals and physicians, and through more frequent requests in regard to local nuisances.

The bacteriological work conducted by the Board has been extended from the examination of water-supplies to the production and distribution of antitoxin; to examination of cultures in suspected cases of diphtheria and of sputa for the bacilli of tuberculosis; and the widespread prevalence of malarial fever, with its appearance in hitherto uninvaded regions, has induced the Board to offer its services in the investigation of the blood as a means of diagnosis.

In the ten years during which the water-supply and sewage and sewerage laws have been in force, an experiment station has been established for the purpose of investigating the subjects of filtration of water and of sewage; thousands of samples of water, sewage, sands, gravels and other soils have been examined; rivers, brooks, ponds, lakes and springs have been visited and investigated in reply to applications for advice with reference to their usefulness for the purposes of water-supply or the prevention of their pollution; hearings and conferences with city and

town authorities have been frequently held, and advice has been given to municipal authorities, corporations, firms and individuals in at least four hundred instances, in cases in which the values involved have ranged from that represented by some small supply to those of the large cities involving several millions of dollars. The North Metropolitan sewerage system providing for the sewage disposal of eighteen municipalities and the Metropolitan water supply for twenty-eight municipalities and one million people were both planned by the Board and are now in process of construction. Other duties of a similar nature entrusted to the Board were the improvement of the Concord and Sudbury rivers, the improvement of the Neponset River, reporting a system of sewerage and sewage disposal for Salem and Peabody, the improvement of the lower portions of the Charles River in connection with the Park Commission, and later, as a joint board with the Harbor and Land Commissions, an investigation of the Green Harbor dike and marshes.

The work for the year 1895, as regards advice to cities and towns on water-supply and sewerage, examination of water-supplies, examination of rivers, water-supply statistics, experiments upon the purification of sewage and water at the Lawrence experiment station, methods employed at the Lawrence experiment station for the quantitative determination of bacteria in sewage and waters, and finally, sewage disposal of towns, occupy 633 pages of concise and compact information of the greatest scientific and practical value.

The usual statistical summaries of disease and mortality and notes on the health of towns close the report.

#### THE THERMIC CYCLE IN ACUTE INFECTIOUS DISEASES.

A RECENT monograph by Maragliano presents a useful study of the cyclical evolution of fever in its relations with local morbid *foyers* occurring in the principal acute infectious diseases: pneumonia, articular rheumatism, typhoid fever, follicular tonsillitis, erysipelas, measles and scarlet fever.

In fibrinous pneumonia, the fever lasts generally seven full days; but this thermic cycle corresponds to a single centre in one lung, or to several running their course simultaneously. When the pneumonic infiltrations form successively, the fever persists longer. In this case, each new pneumonic focus produces a febrile reaction which is less than seven days—in fact the febrile attacks are shorter and shorter, and finally there may be pneumonic infiltrations without fever.

It is generally admitted that in pneumonia the fever presents a continued type. According to Maragliano, this continuity is only apparent. In fact, if the patient's temperature is taken from hour to hour, remissions which are sometimes considerable are noted, and even intermittences in the febrile movement. Early crises are more frequent than is generally supposed: out of 264 cases he has seen the crisis supervene on the second day in two cases, the third day in

three, the fourth day in seven, the fifth day in thirty-five, and the sixth day in forty-one.

The prognosis of pneumonia does not depend on the maxima of temperature, but on the continuity of the fever. As long as the infection lasts, the fever persists, and while this continues, the pneumonia may always have a fatal issue, no matter what may be the height of the fever. The resolution of the local process has no direct and constant relation to the state of the fever, as the engorgement, the exudation, etc., remain for a variable time after the cessation of the fever.

In broncho-pneumonia and pleurisy, the thermic cycle cannot be determined with exactness on account of the complex microbial origin of these affections.

In acute rheumatism the fever is the base of the elevations of temperature corresponding to each of the articular manifestations successively occurring. The number of joints simultaneously affected exercise no influence on the duration or intensity of the fever. One or more foci undergoing evolution together give rise to a fever whose duration never exceeds seven days. The total duration of the fibrile period has no fixed limits, seeing that it depends on the number of successive local invasions. The fever in acute rheumatism has ordinarily a remittent character. The intensity of the infection is generally in direct relation with the degree of the fever.

In subjects affected with typhoid fever, we have multiple infectious foci in the intestine at different periods of development. Cases will occasionally be observed in which the fever lasts only a week. Maragliano has noted many such, where the clinical diagnosis was confirmed by a careful bacteriological examination. These were probably single dothineritic foci without mixed infection. In typhoid fever, as in other acute microbial diseases, the fever is the index of the existence and of the intensity of the infection. When every symptom of general infection disappears the fever ceases. Relapses are attended with a fever less prolonged than that which accompanied the primary infectious foyers.

A single focus in acute follicular tonsillitis provokes a fever which lasts ordinarily just a week. If a second focus is formed, the fever which accompanied it is of less duration, so that two successive foci run their course in less than a fortnight. In acute tonsillitis the fever continues as long as the general infection lasts.

The fever of erysipelas has a variable duration according as there exist one or more foci undergoing evolution successively. A single primary focus, whatever may be its extent, produces a fever of only seven days' duration. Foyers forming one after the other prolong the fever, but not in the same proportion. The fever in erysipelas takes on a subcontinuous type, and ceases with the crisis. The symptoms of the general infection are in relation with the existence and intensity of the fever.

In measles (when exempt from complications) the

duration of the fever is about seven days. It is the same with scarlet fever. In these two diseases, the symptoms of the general infection and the fever disappear at the same time.

In all the acute infectious diseases, there exists a constant relation between the fever and the symptoms of the infection due to the penetration into the general circulation of toxins elaborated by the pathogenic microbes. At the same time there is still a factor which intervenes in the development of the fever, namely, the manner in which the nervous system concerned in the production and regulation of animal heat, reacts against the infection. Individuals whose nutrition and force of resistance are enfeebled react against a same pyretogenous cause by a fever less intense than robust subjects, while those who present considerable thermic elevations support better the grave infections.

It will be seen in most of the infectious diseases, such as pneumonia, follicular tonsillitis, erysipelas, measles, scarlatina, the duration of the thermic cycle corresponding to a single centre of infection is just seven days. From this fact, Maragliano concludes that in a single focus only a limited number of generations of the pathogenic microbe develop, and that, on the other hand, the febrile reaction is provoked, not by the bacterial toxalbumins whose toxic action varies according to the specific microbe from which they come, but by the proto-nucleins contained in the bodies of the bacteria; we know in fact, that these proteins, whatever may be the microbe to which they belong, exert always on the the animal organism the same pyretogenous and phlogogenous action.

As for the abortive infections in which the fever lasts less than seven days, we have really to do with subjects particularly refractory to the pathogenic microbe, for which they constitute a bad culture soil. Maragliano thinks that the fact that each of the foci of infection successively forming produces a fever of less and less duration, is to be explained by the accustomedness of the patient to the bacterial poison by a progressive auto-immunization. The study of the fever chart in the acute infectious diseases furnishes to the clinician important indications. Thus, each new ascension of the temperature indicates the formation of a new focus of infection. A fever whose degree is not in relation with the intensity of the other nervous troubles has an unfavorable signification for the prognosis. A fever chart which presents few oscillations indicates that the bacterial poison penetrates the circulation in a continuous manner; on the other hand, the existence of considerable oscillation is the expression of intermissions occurring in the activity of the pathogenic microbes, a fact which is of good augury from the point of view of the evolution of the disease. The temperature chart, therefore, is our index of the actual toxin producing activity of the bacteria, a sudden rise indicating that having exhausted their present field of activity, they have made new inroads into healthy tissue.

### THE ANTITOXIC UNIT OF DIPHTHERIA ANTITOXIN.

THE present extensive use of antitoxic serum in the treatment of diphtheria and the almost equally widespread ignorance of the significance of the accepted unit of strength, as indicated by letters received from correspondents, makes it desirable to state very briefly what this is. The standard used to measure antitoxic strength was changed several times by Behring in the course of his investigations. With the co-operation of Ehrlich he worked out the comparatively simple but entirely arbitrary standard which is still employed. Ehrlich, now the director of the German Imperial Testing Bureau, whose function it is to test, at the expense of the manufacturers, all serum before it may be offered for sale, has been busy working out a simpler method of standardizing serum, and in October last expressed the hope of soon completing his work and of having it adopted by the German government in place of the one now in use.

The strength of antitoxin is at present determined as follows: Diphtheria toxin, the germ-free filtrate of bouillon cultures of the diphtheria bacillus, is injected subcutaneously into a series of guinea-pigs of nearly uniform weight to determine accurately the smallest quantity of toxin which is fatal to the guinea-pig. When this has been determined the toxin becomes the test-toxin. A given quantity of serum to be standardized is mixed with *ten times the minimum fatal dose* of the test-toxin and injected subcutaneously into guinea-pigs of nearly the same weight as those used in standardizing the toxin. If no local edema or infiltration appears, if, in other words, the guinea-pig is completely protected, the quantity of serum used contains one-tenth of an antitoxic unit.

This is best illustrated by an example: The test-toxin has been standardized and found of such strength that 0.039 c. c. is the minimum fatal dose. The serum to be tested is diluted with sterile normal salt solution until 1 c. c. contains 0.0016 $\frac{2}{3}$  c. c. serum. The serum and 0.39 c. c. toxin are mixed and injected subcutaneously. If the guinea-pig remains permanently well and shows no edema at the place of injection, 0.0016 $\frac{2}{3}$  c. c. serum contains at least one-tenth of an antitoxic unit. One c. c. would contain at least  $\frac{.0016\frac{2}{3} \times 10}{1} = 0.016\frac{2}{3}$  or 60 units, that is, enough serum to completely protect every one of 600 guinea-pigs from ten times the fatal dose of toxin.

In practice a number of guinea-pigs are used, since the strength of the serum must be determined after every withdrawal of blood. If, for example, 0.001 c. c. of a given serum failed to protect the guinea-pig from death, and 0.0016 $\frac{2}{3}$  c. c. still permitted a local infiltration with subsequent necrosis, but 0.002 c. c. protected completely, 1 c. c. of this serum would contain  $\frac{.002 \times 10}{.0016\frac{2}{3}} = 12$  or 50 units.

If, again, 0.001 c. c. of another serum protected completely, but 0.0008 $\frac{1}{3}$  c. c. did not, 1 c. c. of the serum would contain  $\frac{.001 \times 10}{.0008\frac{1}{3}} = 120$  or 100 units, equivalent to Behring's II.

The antitoxic unit may thus be defined as being contained in ten times that quantity of any given serum which is required to neutralize ten times the minimum fatal dose of diphtheria toxin when mixed with the latter and injected subcutaneously into a guinea-pig.

### MEDICAL NOTES.

THE JOURNAL OF EXPERIMENTAL MEDICINE. — The fourth number of the first volume of the *Journal of Experimental Medicine* contains a large number of interesting and valuable scientific contributions, some of them handsomely illustrated. Two of these, "The Histological Lesions of Acute Glanders in Man and of Experimental Glanders in the Guinea-Pig," by J. Homer Wright, M.D., and "A Study of the Changes Produced in the Kidneys by the Toxins of the Staphylococcus Pyogenes Aureus," by John Lovett Morse, A.M., M.D., are from the Sears Pathological Laboratory, Harvard Medical School, and one entitled "Of the Action of Ether on Contracture and of Positive Kathodic Polarization of Vertebrate Voluntary Muscle," by F. S. Locke, is from the Physiological Laboratory of the Harvard Medical School. From the Hygiene Laboratory, Lawrence Scientific School, comes an article by G. W. Fitz, M.D., entitled, "A Study of Types of Respiratory Movements."

### BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, December 16, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 129, scarlet fever 57, measles 143, typhoid fever 26.

DR. T. M. ROTCH LECTURES TO NEW YORK STUDENTS. — Dr. T. M. Rotch, of Boston, lectured before the students of Bellevue Hospital Medical College, New York, by invitation, December 15th. His subject was "Differential Diagnosis in the Eruptive Diseases, with Especial Reference to the Complications of Scarlet Fever." The lecture was illustrated with colored lantern slides.

THE TWELFTH INTERNATIONAL MEDICAL CONGRESS. — Dr. F. S. Watson, President of the American Association of the Genito Urinary Surgeons and Surgeon to the Boston City Hospital, has been requested by the managers of the Surgical Section of the Twelfth International Medical Congress, to be held in Moscow in August, 1897, to assume the honorary presidency at one of its meetings. We understand that Dr. Watson has acceded to this highly complimentary request.

APPOINTMENTS AND RESIGNATIONS. — Dr. David D. Brough has been appointed City Physician of Boston, in place of Dr. W. G. McDonald, resigned. Dr. Carl Carlson has been promoted from Assistant Port Physician, and Dr. William H. Greene has been appointed Assistant Port Physician. Dr. Frank

Willfred Page of the Adams Nervine Asylum in Jamaica Plain, Boston, has been appointed Superintendent of the Vermont State Insane Asylum at Waterbury, Vt.

## NEW YORK.

**THE ACQUITTAL OF MARIA BARBERI: PSYCHICAL EPILEPSY.**—In commenting on the verdict in the second Maria Barberi trial, Mr. E. M. Friend, the senior counsel for the defence, has expressed the following opinion: "Maria's acquittal was just what we expected, as no other verdict could be conscientiously arrived at from the evidence. The defence of psychical epilepsy, introduced by us is something new in criminal trials; this being the first defence of the kind ever introduced in a criminal case. Whether it will become a popular defence I cannot say; but, when honestly interposed, as it was in this case, it should prevail." There is something almost comic about the expressed want of certitude on the part of the ingenious, if not learned, counsel for the defence as to whether "psychical epilepsy" is likely to become "a popular defence." It seems to imply an opinion that murder is likely to become a "popular" indulgence. There was a vast amount of futile and contradictory expert testimony in this case, against which the jury was warned by the judge in his summing up. While, in view of all the circumstances, and especially of the fact that the defendant has already suffered two years' imprisonment, with the possibility of execution constantly hanging over her, few will be disposed to doubt the substantial justice of her escape from the extreme penalty of the law, the most serious objection to the verdict is that no legal precautions can apparently be taken to prevent such a person from committing a similar act in the future. As she was not adjudged insane, there is no provision for secluding the prisoner in an institution where she would be incapable of doing further mischief, and she is thus allowed to go entirely free.

**A PUBLIC AQUARIUM.**—On December 9th the public aquarium, which has been so long in course of preparation in the old Castle Garden building at the Battery, was opened by a private reception. On the following day it was thrown open for the first time to the public, and was visited by nearly 12,000 persons. It is under the direction of Dr. Tarleton H. Bean, who was at one time Chief of Fish Culture at Washington, and he pronounces it without doubt the most commodious aquarium in the world. On the main floor there are seven pools of water: one large central pool 38 feet in diameter, and six pools surrounding it each 28 feet in length. There are also 36 wall tanks, besides a considerable number of glass tanks in various positions.

**A BEQUEST TO THE GERMAN HOSPITAL.**—Among the bequests of the late William Steinway, the head of the famous piano manufacturing company, was \$3,000 to the German Hospital. While the charitable legacies of his will are comparatively small, Mr. Steinway was a very public spirited citizen, and gave away large amounts during his long and useful career.

**DEATH OF DR. CHARLES HEITZMANN.**—Dr. Charles Heitzmann, the distinguished microscopist, pathologist and dermatologist, died in Rome, Italy, on December 6th, at the age of fifty-eight. He was graduated from the University of Vienna in 1859 and came to New York, about twenty years ago. Of late years he has had associated with him his son, Dr. Louis Heitzmann, who was graduated from the College of Physicians and Surgeons, New York, in 1885.

**DEATH OF DR. C. N. WOOLLY.**—Dr. Charles N. Woolly, a prominent physician of Newburgh, on the Hudson, died at his residence in that city on December 11th. He was fifty-eight years of age, and was born at Southampton, Long Island. He was graduated from the University at Michigan and afterwards from the Bellevue Hospital Medical College, New York. He had practised twenty-three years in Newburgh, and was for some time President of the Board of Education there.

## Correspondence.

## WHO DISCOVERED ANESTHESIA AND GAVE "PAINLESS SURGERY" TO THE WORLD?

SAN FRANCISCO, CAL., November 22, 1896.

MR. EDITOR:—After fifty years have passed since the date of the first surgical operation while the patient was under its influence, and thirty years after the body of Dr. Morton had been placed in the tomb, again an attempt is made to give all the honor of the great discovery to Dr. Charles T. Jackson.

Of the dead I will say nothing but good, and may their memory be embalmed with the affection of the people.

At the close of the first operation there was manifested an exultant feeling of unexpressed joy, and "Eureka" echoed from every heart; and I would rather the memory of that scene should remain than to have it disturbed by any unpleasant contention.

Recently I received a copy of the *National Magazine*, and my attention was called to an article in it, upon the subject of Anesthesia, by Mr. William Barber, who gave Dr. Jackson the honor of the discovery under discussion; and later I received a pamphlet from Edward Waldo Emerson, M.B., upon the same subject. These gentlemen discuss the question from the same standpoint and employ the same methods. Their conclusions are a unit, namely, that they are willing to divide the honor with Dr. Jackson and Dr. Morton, but say Dr. Jackson is *entitled to all* the honor. This may seem to be unselfish and generous on their part; but we are not seeking these sentiments in the postulate of this controversy. All we desire is to know the facts, and have our opinions and conclusions governed by them.

They seem to have sailed upon the ocean of uncertainty, put into many ports, to have been received with royal favors, and then to have returned to the point they left, unladen with new arguments, and unarmed by observations, with no compensation for the time expended on their voyage of discovery.

The letters of congratulation they produce from the Hon. Edward Everett, Ralph Waldo Emerson, Professor Agassiz, Beaumont, C. G. Loring, and many other distinguished gentlemen at home and abroad, can be considered no more than courtesies due to Dr. Jackson for the statements which he made to them, or as an expression of the pleasure they experienced upon learning that pain was to be forever banished from the human family, while undergoing surgical operations. Such expressions were consistent with their feelings of philanthropy, but did not in any-



wise solve the question and demonstrate that Dr. Jackson was the discoverer of anesthesia as it was applied to surgery. We admit that he was made insensible after inhaling ether, but that only proved its lethean effect, and not that it would be safe to use it in the practice of surgery; that was left to another to prove — Dr. Morton.

Whatever was registered upon the back of the chair in which Dr. Jackson sat when he inhaled the ether could not possibly have anything to do with the real merits of the question.

The "Columbus" argument cannot be considered to have any bearing upon the question of "Who discovered anesthesia?" but returns to the writer like a boomerang to defeat him and destroy his theory, and gives the friends of Dr. Jackson occasion to say to him, *non tali auxilio, nec defensoribus*; yet I fully appreciate what Dr. Emerson says, that it was not the man at the mast-head who first shouted "Land!" to whom the honor belongs for the discovery of America, but to the man who was on his voyage of discovery and steered his vessel in the direction of the unknown land — Columbus himself.

A man may build a house without driving a nail or handling a board, or he may build a railroad without moving, by his own physical effort, a shovelful of earth, placing a "tie" or laying a rail, provided he furnishes the means to accomplish the object; but it does not appear that Dr. Jackson furnished any means except a suggestion, or that he had any object in view when he inhaled the ether except to see if it would put him to sleep, and did not pursue the investigation any farther for three or four years, or until the great discovery had been made.

Admitting that Dr. Jackson furnished a valuable suggestion to Dr. Morton, I have not been informed that the records show, as a matter of fact, that he had any object in view other than that which related to dentistry.

If he made the discovery of ether as it is applied to surgery in 1843 or 1844, as it has been claimed he did, and concealed it, he certainly is not entitled to be called the world's benefactor.

On the other hand, Dr. Morton had a fixed and definite object, and pursued his investigation daily with earnestness. He made the crucial test upon himself; he experimented upon others in his office, and wherever an opportunity presented, experimented upon the lower animals, until he became satisfied that he had solved the problem; and then he sought an opportunity to present his discovery to the world. He found a friend in Dr. John Collins Warren, who invited him to meet a number of the prominent members of the medical profession in the amphitheatre of the Massachusetts General Hospital, where arrangements would be made for him to test the value of his discovery.

The preparation was simple. There was no antiseptic bandages, nor had the instruments been sterilized. The blades were laid on the white cloth upon the table, bright and glistening, ready for the great surgeon's use. The patient was ready and waiting. When Dr. Morton entered a little behind the appointed hour, Dr. Warren said to him, "Your patient is ready, sir." Then Dr. Morton administered the ether for the first time in public; and when the surgeon moved with the knife in his hand, the angel of silence seemed to hover over the scene and tell the importance of the occasion. The operation was a success, and forever after painless surgery was given to the world, and generations yet to be will owe Dr. Morton a debt of gratitude, and the old hospital amphitheatre will always remain sacred to the memory of Dr. J. Collins Warren and Dr. Morton.

While I do not wish to enter into any journalistic controversy upon this subject and wrest from the urn of buried memories any of the unpleasant things that characterized the early controversy of those who sought honor and immortal fame, I desire to see justice done — *Fiat justitia, ruat cælum* — and cannot possibly have any personal interest in the claims of either Dr. Jackson or Dr. Morton.

Having witnessed the first surgical operation performed while the patient was under the influence of anesthesia, I was invited by Prof. L. C. Lane to read a paper upon that

subject at the Cooper Medical College before the Medico-Chirurgical Society of this city, February 3, 1896. At that time I gave Dr. Morton the credit for the discovery, in the conscientious belief that I was right; and having since refreshed my memory, I know the honor belongs to him, and to no other.

In preparing my paper I did not wish to exhume from the records any portion of the history of the controversy which seemed to be largely of a personal character or legal in nature; for it has always seemed to me, that, during the long contest of the two gentlemen for the honor of the discovery, an *ante-mortem* inquest was held upon the claim of Dr. Jackson for the honor of being the discoverer of anesthesia, and that a very just verdict was rendered against such a claim.

Dr. Jackson being a scholarly man and an accomplished gentleman, he had an advantage over Dr. Morton in readily gaining a personal interview with the leading scholars, statesmen and scientists, not only of our own, but of foreign countries; and it was through his relations with the Academy of Arts and Science of France, that Dr. Morton secured his first recognition abroad. While in Europe it appears that Dr. Jackson availed himself of this advantage; the impression he first made upon the brain cells of the *savants* in the different countries of Europe could not be wholly obliterated so as to enable them to give an impartial recognition to another, and he received the highest decorations of honor ever bestowed upon any one. But these honors were bestowed upon him from *ex parte* testimony, while the maxim *audi alteram partem* was entirely overlooked.

Before the remarkable historical operation was performed, Dr. Warren, standing in the presence of a number of the leading members of the profession, distinctly said, "We are about to perform an operation while this patient is under the influence of some gas — said to be a compound the precise nature of which we do not know," or equivalent words. Shortly after Dr. Morton entered the amphitheatre and administered the "compound," which afterwards was known to be sulphuric ether, and the operation was successfully performed which made the occasion one of the most memorable in the history of medicine.

Referring again to Columbus, it is interesting to note that he was born in the year 1446, and discovered the western continent about the 16th of October, 1492; and that while Ferdinand and Isabella furnished the means to fit out the *Santa Maria*, *Nina* and *Pinta* to go on the voyage of discovery, they did not claim, nor did any one think of giving them, the credit of making the discovery. But Vesputius Americus did claim to be the discoverer of America, yet he failed to establish his claim.

Just four hundred years later, in 1846, two gentlemen entered into a bitter legal contest for the honor of making the discovery of anesthesia. Fifty years before, in 1796, Dr. Edward Jenner discovered the prophylaxis of vaccination; but was soon assailed, and other claimants appeared before the world asserting a prior discovery. Dr. Jenner, however, maintained his rights to the honor of a public benefactor.

Contention appears to be the outgrowth of important discoveries in every department of life.

Very truly yours,

WASHINGTON AYER, M.D.

NOTE. — A circumstance in connection with this subject occurred, which has never been told to the public, and I will relate it in a simple way, that I may not be misunderstood, as it appears to be strong presumptive evidence in favor of the claim of Dr. Morton.

In 1846 I was living at No. 10 Province House Court in Boston. There was boarding at the house during that time a gentleman by the name of John P. Healy, a prominent member of the Suffolk bar; but not being an eloquent pleader he did not often appear in court except in cases of equity. He had his office with the Hon. Daniel Webster, with whom he was associated in many cases; and also connected with him in his private business was a gentleman

by the name of Burbank, who was a personal friend and social adviser of Dr. Morton.

It was the custom of Mr. Healy after dinner to engage in conversation with the ladies and gentlemen at the table; and on a number of occasions he directed his remarks personally to me in regard to a discovery a young dentist by the name of Morton had made of a medicine that would destroy pain, and which he was then experimenting with before giving it to the public. Such a discovery, he said, would indicate a great progress in medicine and encourage investigation, and that possibly I might at some future time be connected with some great discovery. This, I presume, was said to encourage me as a medical student, as I was soon to graduate in medicine.

Late in September of the same year Mr. Burbank sent me an invitation to call at his office and meet Dr. Morton, who wished to interview me and learn what gases could be inhaled any considerable time without harm. I sent word that I had a previous engagement, but that I would see Professor Webster during the day and ask him, and call the next morning prepared to answer any question upon that subject, but was told that Dr. Morton would leave the city that evening and not return for several days; and consequently, I never met him. I have been thus minute in relating this circumstance, for the reason that it has been stated that the Academy of Science of France sent a letter to the Hon. Daniel Webster, asking his opinion regarding the merits of the claims of Drs. Jackson and Morton; but I have never been informed that there was any record of his reply, and it would appear from the facts I have stated, that he would have had some knowledge of the discovery of anesthesia, a subject in which Mr. Healy was most deeply interested, and that he would not have given his opinion against Dr. Morton.

W. A.

### FRACTURE OF FIRST PHALANX OF THE LITTLE TOE.

DENVER, COL., December 12, 1896.

MR. EDITOR:—In connection with the recently-reported instances of fracture of the first phalanx of the little toe, I send you the following case:

Mr. S., driver, thirty-two years of age, states that two days ago his horse trod upon his left foot, in the region of the little toe. There was considerable pain at the time, which shortly disappeared, and did not interfere with his work. On the following day the pain returned, and a druggist whom he consulted informed him that the toe must be broken. On the third day he consulted me, when he presented marked crepitus, deformity, ecchymosis and pain over the region of the first phalanx of the left little toe. It was strapped to the fourth toe with adhesive plaster, and is doing well.

Yours very truly,

S. D. HOPKINS, M.D.

### THE CRYING NEEDS OF THE BOSTON MEDICAL LIBRARY.

BOSTON, December 3, 1896.

MR. EDITOR:—A visit to the library of the New York Academy of Medicine not long ago, and an inspection of its beautiful and well arranged reading-room and book-stack, situated in a fine fire-proof building on a quiet up-town street, made a very painful contrast in my mind to the crowded, poorly arranged quarters of the Boston Medical Library.

It cannot be that the profession in Boston fully realizes that its library, now consisting of over 27,000 books and bound periodicals, and 24,000 pamphlets, to say nothing of many valuable paintings and priceless collections of photographs and prints donated by the noted medical men of Boston, are now huddled in an old dwelling-house many times too small to accommodate the library, and in eminent danger of being burned at any time.

Twenty years ago the present building in Boylston Place was considered amply sufficient for the needs of the library.

To-day the books are piled on the floors and in every available nook and corner; and yet room is lacking for them all, and the librarian has been forced to obtain storage-room outside the building for the works less commonly consulted.

It is not to be wondered at that many donations of books, instruments and portraits should be withheld by trustees of estates because there is no reasonable guarantee that if entrusted to the library they will not be destroyed by fire. I am informed that there are several such at present that the library is likely to lose if a suitable building is not soon constructed.

Boston is known everywhere for her public spirit, and is second to no city in this respect. When a city or town is devastated by fire, it is Boston who first sends relief. Boston supports many missionary enterprises in foreign lands and many charities at home. Her medical library needs help badly; and if she would maintain her high position as a medical centre, the proper housing of the medical library is of the first importance.

On learning from the librarian in New York that only a few years ago their library was nearly as badly off as ours, and that now they have besides their new building, which provides accommodations not only for the library, but for the different sections of the Academy of Medicine and other societies as well, permanent library funds amounting to \$22,000 besides a general permanent fund of over \$300,000, it seemed to me that the prospect for us was most encouraging, and that all that is needed is that the profession should be awakened to the true state of affairs so that the members may contribute from their own resources, and induce their wealthy friends to do likewise.

Yours truly,

W. L. BURRAGE, M.D.

### RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 5, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York . . .	1,892,332	570	184	14.40	12.42	2.52	2.52	6.30	
Chicago . . .	1,678,967	—	—	—	—	—	—	—	
Philadelphia . .	1,164,000	341	100	13.95	17.67	.31	2.17	10.85	
Brooklyn . . .	1,100,000	—	—	—	—	—	—	—	
St. Louis . . .	580,000	—	—	—	—	—	—	—	
Boston . . .	491,206	195	59	13.26	45.30	—	4.59	4.59	
Baltimore . . .	496,315	151	47	15.18	10.66	2.06	.86	11.22	
Cincinnati . . .	336,000	101	29	13.00	14.00	2.00	3.00	6.00	
Cleveland . . .	311,537	84	28	17.85	8.23	—	5.96	10.71	
Washington . . .	275,500	—	—	—	—	—	—	—	
Pittsburg . . .	238,617	—	—	—	—	—	—	—	
Milwaukee . . .	275,000	—	—	—	—	—	—	—	
Nashville . . .	87,764	22	8	8.30	12.45	—	4.15	—	
Charleston . . .	65,165	—	—	—	—	—	—	—	
Portland . . .	40,000	—	—	—	—	—	—	—	
Worcester . . .	98,687	33	12	18.18	18.18	6.06	—	6.06	
Fall River . . .	88,020	—	—	—	—	—	—	—	
Lowell . . .	84,359	22	5	16.60	8.80	—	—	12.45	
Cambridge . . .	51,519	16	7	12.50	6.25	—	—	12.50	
Lynn . . .	62,355	22	8	12.45	12.45	—	—	8.30	
New Bedford . .	55,264	15	9	20.00	20.00	13.33	—	6.66	
Springfield . . .	51,534	22	7	12.45	12.45	8.30	—	4.15	
Lawrence . . .	52,153	12	4	8.33	16.66	8.33	—	—	
Holyoke . . .	40,149	—	—	—	—	—	—	—	
Salem . . .	34,437	5	1	40.00	—	—	—	40.00	
Brookton . . .	33,157	8	0	25.00	12.50	—	12.50	12.50	
Haverhill . . .	30,185	10	2	20.00	—	—	—	10.00	
Malden . . .	29,709	7	2	—	11.28	—	—	—	
Chelsea . . .	31,295	8	3	12.50	12.50	—	—	—	
Fitchburg . . .	26,394	8	2	25.00	—	—	—	12.50	
Newton . . .	27,622	8	2	12.50	—	—	12.50	—	
Gloucester . . .	27,663	—	—	—	—	—	—	—	
Taunton . . .	27,063	4	2	50.00	—	25.00	25.00	—	
Waltham . . .	20,877	6	2	16.66	33.33	—	—	16.66	
Quincy . . .	20,712	8	3	12.50	12.50	—	12.50	—	
Pittsfield . . .	20,447	7	4	14.28	14.28	—	—	14.28	
Everett . . .	18,578	6	2	16.66	—	—	16.66	—	
Northampton . .	16,738	—	—	—	—	—	—	—	
Newburyport . . .	14,564	8	1	12.50	12.50	—	12.50	—	
Amesbury . . .	10,920	—	—	—	—	—	—	—	

Deaths reported 1,771: under five years of age 617; principal infectious diseases (small-pox, measles, diphtheria and

croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 258, acute lung diseases 235, consumption 203, diphtheria and croup 134, typhoid fever 49, diarrheal diseases 31, scarlet fever 16, whooping-cough 10, cerebro-spinal meningitis 6, measles 4, erysipelas 3.

From scarlet fever New York 5, Boston 4, Providence 2, Baltimore, Nashville, Worcester, Somerville and Haverhill 1 each. From whooping-cough New York 5, Baltimore, Boston, Cleveland, Providence and Fitchburg 1 each. From cerebro-spinal meningitis New York 3, Worcester, Somerville and Chelsea 1 each. From erysipelas Cincinnati 2, Boston 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending November 28th, the death-rate was 19.3. Deaths reported, 4,021: acute diseases of the respiratory organs (London) 435, diphtheria 86, measles 84, scarlet fever 60, fever 53, diarrhea 36.

The death-rates ranged from 14.2 in Oldham to 33.1 in Wolverhampton: Birmingham 18.6, Bradford 19.6, Croydon 15.9, Gateshead 19.1, Hull 21.2, Leeds 18.7, Leicester 16.0, Liverpool 23.3, London 18.8, Manchester 21.9, Newcastle-on-Tyne 17.4, Nottingham 18.6, Portsmouth 16.1, Sheffield 18.8, Swansea 22.2.

#### METEOROLOGICAL RECORD

For the week ending December 5th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r.		Rainfall in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.			
S...29	30.34	38	46	31	93	82	88	N.W.	N.	9	12	O.	O.	.31
M...30	30.31	31	35	27	100	84	92	N.	W.	9	12	O.	O.	.20
T...1	30.37	28	32	23	76	73	74	W.	W.	13	9	C.	C.	
W...2	30.45	20	23	16	81	53	67	N.W.	N.	15	17	F.	O.	
T...3	30.34	16	20	13	81	56	68	N.	S.W.	20	9	C.	O.	
F...4	30.32	28	38	18	71	78	74	W.	S.E.	11	10	F.	O.	
S...5	30.10	42	47	36	83	69	78	N.W.	W.	9	5	C.	C.	.0
W...6	30.32	34	23				77							

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threaten-  
ing; N., snow. † Indicates trace of rainfall. — Mean for week.

#### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 5, 1896, TO DECEMBER 11, 1896.

Leave of absence for one month, on surgeon's certificate of disability with permission to leave the Department of Dakota, is granted MAJOR WILLIAM C. SHANNON, surgeon, Fort Custer, Mont.

FIRST-LIEUT. JAMES M. KENNEDY, assistant surgeon, Fort Missoula, Mont., will proceed to Fort Custer, Mont., and report for temporary duty at that post.

Leave of absence for one month is granted FIRST-LIEUT. PAUL F. STRAUB, assistant surgeon, Angel Island, Cal.

#### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 12, 1896.

H. F. PARRISH, assistant surgeon, resignation accepted from January 1, 1897.

E. H. MARSTELLER, surgeon, ordered to the "Raleigh."

H. G. BEYER, surgeon, detached from the "Raleigh," and ordered to the "Newark."

H. B. FITTS, passed assistant surgeon, detached from the "Essex," ordered home and placed on waiting orders.

C. D. BROWNELL, passed assistant surgeon, detached from the Puget Sound Naval Station and ordered to the "Petrel," December 16th.

#### TWELFTH INTERNATIONAL MEDICAL CONGRESS. Moscow, August 19-26, 1897.

Claudius H. Mastin, M.D., of Mobile, Ala., has been requested and has consented to serve as one of the members of the American National Committee of the Twelfth International Medical Congress of 1897.

The Central (Moscow) Executive Committee consists of the following gentlemen: President, Prof. I. F. Klein. Vice-Pres-

dent, Prof. A. J. Kojownikow. Treasurer, Prof. H. F. Filatow. Secretary-General, Prof. W. K. Roth. Secretaries: Prof. P. I. Diakonow, Prof. A. J. Tikhomirov, Prof. I. F. Neyding. Members: Prof. S. S. Korsakow, Prof. J. F. Ognew, Prof. W. D. Chervinsky.

It is officially announced that preparations are being made for the reduction of Transatlantic steamer and European railroad fares.

A. JACOB, M.D.,  
Chairman, American National Committee.

#### SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, December 23d, at 8 P. M.

Papers: Dr. E. S. Boland: "Some things I was not taught in Obstetrics."

Dr. C. G. Cumston: "Hydrocele of the Canal of Nuck, with report of a Case."

F. W. JOHNSON, M.D., Chairman.  
C. H. HARR, M.D., Secretary.

#### RECENT DEATHS.

LEONARD J. SANFORD, M.D., one of the oldest professors of Yale, died in New Haven, Conn., December 12th. Dr. Sanford was born in New Haven, November 8, 1833. He studied at the Yale Medical College and afterwards at the Jefferson Medical College of Philadelphia, where he obtained his degree of doctor of medicine in 1854. Since that time he has resided in New Haven. He was a member of the American Medical Association and of the American Academy of Medicine. To medical literature he contributed many pamphlets on anatomical subjects. In 1858 Yale conferred on him the degree of A. M. Five years later he was elected professor of anatomy and of physiology in the medical department of the university. He had held that chair till quite recently, giving annual lectures. For many years he was lecturer on physiology and hygiene in both the academic and scientific departments of Yale.

ADOLPHE GASTON ROETH, M.D., M.M.S.S., died December 10th. He had been in ill health and his death was not unexpected. Dr. Roeth was born in Boston in October in 1850, was graduated from the University College, London, in 1873, and began practice in Boston in 1881. He had served on the Boston School Committee and was at one time United States Pension Examiner in the Federal Building.

#### BOOKS AND PAMPHLETS RECEIVED.

The Practice of Medicine. By Horatio C. Wood, A.M., M.D., LL.D. (Yale), Professor of Therapeutics and Clinical Professor of Nervous Diseases in the University of Pennsylvania, Member of the National Academy of Science; and Reginald H. Fitz, A.M., M.D., Hersey Professor of the Theory and Practice of Physic in Harvard University, etc. Philadelphia: J. B. Lippincott Co. 1897.

Diseases of the Eye; A Hand-Book of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College, Professor of Diseases of the Eye in the Philadelphia Polyclinic, etc. With 256 illustrations and two chromo-lithographic plates. Second edition, thoroughly revised. Philadelphia: W. B. Saunders. 1896.

A Treatise on Surgery by American Authors. For Students and Practitioners of Surgery and Medicine. Edited by Roswell Park, A.M., M.D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, Buffalo, N. Y., etc. Vol. III, Special or Regional Surgery. With 451 engravings and 17 full-page plates in colors and monochrome. Philadelphia: Lea Brothers & Co. 1896.

A Pictorial Atlas of Skin Diseases and Syphilitic Affections. Part IV. In photo-lithochromes from models in the Museum of the St. Louis Hospital, Paris. With explanatory wood-cuts and text. By Ernest Besnier, A. Fournier, Tenneson, Hallopeau, DuCastel, with the co-operation of Henri Feulard. Edited and annotated by J. J. Pringle, M.B., F.R.C.P., Assistant Physician to, and Physician to the Department for Diseases of the Skin at the Middlesex Hospital, London. London: The Rebmans Publishing Co. Philadelphia: W. B. Saunders. 1896.

Röntgen Rays and Phenomena of the Anode and Cathode Principles, Applications and Theories. By Edward P. Thompson, M.E., E.E., Member American Institute Electrical Engineers; Member American Society of Mechanical Engineers; Author of "Inventing as a Science and an Art." Concluding chapter by Prof. William A. Anthony, formerly of Cornell University, Past President American Institute of Electrical Engineers, Author, with Professor Brackett, of Princeton, of "Text-Book of Physics." Sixty diagrams, forty-five half-tones. New York: D. Van Nostrand Co.

## Lecture.

### MEDICINE AS A PROFESSION.<sup>1</sup>

BY DAVID W. CHEEVER, M.D., LL.D.

MEDICINE as a profession brings the doctor into contact with all kinds of men, women and children — of all ages, from birth, literally, to death. No other relation of life, except the family relation, is so close; and in some respects, it even surpasses that. The peculiar relation of the patient to the doctor is different from any other. It makes no difference to the doctor, when he has a case, what sort of a coat happens to cover it, or of what condition in life the patient may be. If he has a true professional spirit he sees only the sick person, and he keeps before him the only idea which can properly belong to the medical profession, — that his business is, first, to try to relieve suffering, and cure sickness; and, secondly, if he cannot fully accomplish those things, at any rate to prolong life and render the close of life and the approach of death more easy. In that way, in some respects, his calling is, I think, even more sacred than that of the clergyman; because it deals with tangible and known things that we all can realize; so the good that he does is soon apparent; the mistakes that he makes are soon plain to be seen; and the reproaches that he may make himself for those mistakes are sometimes very bitter when he realizes the truth. Thus thrown into such very intimate relations with humanity, he becomes a participator in all its secrets; and he frequently knows all the secrets of the family, and even the secrets of certain portions of the family that are not known to the rest. He is, so to speak, a father confessor to all classes of human ills and sicknesses, and, of course, should hold it a point of honor to keep these secrets. It used to be the rule that a physician should take oath on beginning to practise his profession that no secret imparted to him in the sick-room should ever leave it.<sup>2</sup> This rule is as important to-day as it ever was, perhaps more so; because in these days of modern publicity, when there is no private life, who shall be the guardian of these important interests, if not the physician and the clergyman — the two forms of confessor to whom human beings go in their misery to tell their sins, their sorrows or their physical infirmities. What, then, shall we think of the law, which, in the State of Massachusetts, does not protect the physician in court in the keeping of secrets, but obliges him to tell them in certain circumstances, under penalty of imprisonment? It seems to me that this is a shame to Massachusetts, because it is in this State and some others, but not in all the States in the Union, that this condition of the law prevails. While here, as I am told by those who know the law, and as I have experienced in court, the physician is not protected in refusing to divulge the secrets of his patients. He may absent himself. He may, if he thinks proper, tell lies; but that is perjury. Certainly this is not the way in which the law should be respected and obeyed; for where the people make the laws, they

should be amended, but not violated. A number of the States of these United States protect the doctor in the possession and retention of family secrets. Some States go farther, and being more advanced in humane legislation than we are, make it criminal for the doctor to reveal the secrets of his patient in court. He is not only protected in his effort to keep them, but he is forbidden in the State of New York, to divulge them; and also in seven other States. In Massachusetts, the law still reads, as I understand it, that the physician has no defence; that if the counsel or judge think it is for the best interests of the case that certain statements should be made, they must be made. No one would deny that this ought to be done in serious criminal procedures which involve life or death; but that in ordinary civil suits affecting only the reputation of the individual who, perhaps, is on trial or is forced on trial, private affairs should thus be dragged into publicity, seems to me extremely wrong. The doctor has no redress unless he refuses and is punished. I hope that the profession here will soon take steps to have this legislation changed.<sup>3</sup>

The doctor is a victim of the interviewer and reporter: they not only pursue the doctor, but haunt the house of the sick, and even the chamber of death. There is no privacy, no respect for the patient's feelings. If any person, in a public position, happens to be sick or dying, the papers want it all, and without regard to the feelings of the friends. Now, what course must the doctor take when pursued in this way? Reporters come from his own town, or from distant cities, and claim that the illness of this person, and whether he is to live or die, is of great importance to the public. Why? Because it may affect some political deal; because it may affect the stock market; certain changes may take place if he is about to die; and so on. To whom is this man's reputation and life so important as to his own family? How can the doctor presume to give away that knowledge which belongs to the family? It seems to me the only answer for a physician to make, is to say: "If you will bring me a note from the nearest relatives requesting me to give you such knowledge as I can of this patient, you shall have it; otherwise I shall say nothing; and you may place whatever interpretation you please on my silence."

There is another situation into which we are thrown, where the preservation of secrecy is doubly important, because the patient is beside himself and says things that he would not say if in perfect control of his senses. I allude to that condition where the patient is under the influence of anesthetics, especially ether.

<sup>1</sup> *Greenleaf on Evidence* (Edition of 1896, vol. 1, p. 248, under "Privileged Communications"). — "Neither is protection extended to medical persons in regard to information they have acquired confidentially, by attending in their professional characters."

Protection by common law is not extended to priests; although the Roman Church regards the confession as made to God, and forbids its revelation; and in the English Church, the clergyman telling is "under pain of irregularity." Anything told to legal counsel, however, is a privileged communication, and cannot be questioned, unless the party making it waives his rights as to secrecy. Massachusetts courts go by the common law, and oblige the physician to tell the secret confidences of his patient, and to lay bare his diseases or his sins. Not so New York, Missouri, Indiana, Nebraska, California, Wisconsin, Michigan, Minnesota — other States I have no knowledge of.

*Revised Statutes of New York* (vol. II, p. 406, paragraphs 72, 73). — "No person duly authorized to practise medicine or surgery shall be allowed to disclose information acquired in attending a patient in a professional character, and which information was necessary to enable him to prescribe for him, or to do any act as a surgeon."

The New York statute has been held to apply also to knowledge acquired by observations of the patient's symptoms, or even the statements of others present. Paragraph 72 extends the same privilege to priests and ministers.

<sup>1</sup> A Lecture given in the Post-graduate Course at the Harvard Medical School, October 22, 1896.

<sup>2</sup> The oath of Hippocrates also forbade the taking of fetal life. It is the doctor's business to save life, not to destroy it. No occasion should tempt the physician to destroy an infant except to save the mother. Whether, under proper restrictions, he might be allowed to hasten the exit of the really moribund sufferer, and promote euthanasia, is a question.

It is an intoxicant; it is a stimulant; it incites people to talk; they do not know what they are saying; everything is exaggerated in their mind; they usually feel that they are being abused; and they frequently use very strong language, which they would not do under ordinary conditions. So also, in coming out of ether, many men, but especially women, pass into a state of hysterical excitement where everything becomes exaggerated; and they frequently say things which they would rather not have said, and sometimes betray secrets which they would rather not have spoken of. Now here is a position in which the doctor, the nurse, and all the attendants are placed under a double bond of secrecy; here is a helpless individual whom you have reduced to a condition in which he knows nothing, and it is worse than indiscretion on the doctor's part to divulge anything that transpires while the patient is in such condition. He should consider that anything said there has not been said; that anything that has been heard there has never been heard; and that no reference should ever be made to it. If one begins to tell such things the habit grows upon him; consequently here is where silence illustrates the rule, that speech is silver and silence is gold. It is doubly so in the sick-room, where an anesthetic has been used.

Now, we know a great deal more about their condition than the patients do themselves. Shall we always tell them the truth, or not? They wish, apparently, to know the truth, and yet they dread to know it. I mean this, of course, of quite sick people. Sometimes a patient will come into your office and say: "I have been asked to come and see you because I have a tumor here; I don't care about it; it does not make the slightest difference to me what it is; nothing would affect me. I want the truth, and you may be sure that it would not trouble me at all." Now, that is all false — all false; and you must so consider it. They do not think so; for anything you tell them will have a deadly effect. No man can bear the truth; it takes away the chances of his recovery. If he is about to have an operation, if some growth is to be removed from him, and if he learns that what is removed from him is but a temporary relief from another operation which must follow, this will prevent rapid convalescence, and will weigh upon him all the rest of his life. And the surgeon may be mistaken; it may not come back so quickly. Meantime you have pressed him down beyond the hope of recovery. How much worse must this be in the case of acute sickness, as in a prolonged case of consumption, where the patient having lingered along for a good while finally asks the physician what he thinks. You know he is going to die; you know sometimes it will take place in a few days or hours. Are you going to tell him? Here comes one of the hardest moments of the doctor's life. He should consider it his duty to tell the friends, but whether he should tell the patient must be left to the doctor's judgment. There are some cases where he had better lie, I think, although the patient may live only a few days. There are other cases, of course, where he should hesitate to leave him in doubt, on account of the fact that there can be no recovery, and the patient should know it if he wants to; again, he should not prevaricate too much, out of regard for his own position, as he has to protect his own reputation; and if he gives an utterly false prognostication, and a day or two

shows it false, it injures him and is the subject of a great deal of talk. But it is not right to take away from a patient any hope which may aid in his recovery.

There are cases when friends come to the doctor and say, "You know that this is going to terminate fatally?" "Yes." "You know it will be pretty soon; do you realize that unless the patient knows it and arranges his affairs, it is going to leave us beggars?" Now that is not an uncommon case; and if you can assure yourself that it is true, of course you feel obliged to speak to the patient; but if you can, try to make light of it; telling him that he should arrange his affairs, as we should all arrange our affairs and so on; yet anything you say, at any time, will be quickly picked up by the patient, and perhaps be thought to mean more than you do mean. Here, also, is another reason why doctors should be cautious and reticent; because their stories are doubled the second time they are told, and tripled the third. Nothing that a doctor says retains its simplicity; when passed around from mouth to mouth, it is added to, and speedily grows into something entirely different from what he would have wished to utter.

I need not say, of course, that, speaking in a selfish point of view, it is extremely important that in the ordinary intercourse of life the doctor should be reticent among his patients, because if he gets the reputation of giving away their private affairs, it soon injures him in the community. One who can be entirely reticent wins more respect, and retains more the confidence of all the world. So much for the doctor's immediate relation to the patient as regards his secrets, and as regards the necessity of telling him the truth when he is sick.

Now, there is this peculiarity in the relation of doctor and patient, that if a doctor once enters upon a case, he does not feel that he can give it up voluntarily until the patient sees fit to discharge him; as long as the patient wishes him to go, he must go, with or without prospect of reward. If he has not touched the case, all right; but if he has once taken it up, he must go on. How often this happens with a young doctor whose first patients are among the poorer classes. Their means are soon exhausted, money is gone, no more money is earned, but that patient has got to be seen through, no matter if it takes a month or a year. Of course there are cases where the patient wishes to change, and then the doctor has nothing to do but to retire. The relations of the doctor and patient are peculiar, they are so close and intimate; and they are of a most friendly and charming character when confidence is preserved; but as soon as confidence in the physician has begun to waver, then is the time the doctor is of no use. He had better be excused, and another take his place.

Consultation may be called for various reasons. In the first place it may be called, as it ought to be in most cases, solely for the good of the patient. It may be called, secondly, by the doctor to protect himself; it is wiser for the doctor, I think, if he finds the patient wavering, to suggest a consultation, as this is

<sup>4</sup> The doctor is not obliged to go when called; the only law which binds him is the obligation of humanity. Thus, if in an isolated community and no other physician were to be found, he might feel obliged, while he would not in a city or town where there were other doctors. Fatigue, sickness, overwork, other engagements, are sufficient excuses. Were it otherwise, he would soon die of exhaustion. He may decline, day or night; he can select his patients as he chooses; but if he goes, he feels obliged to continue.

much better than if the suggestion comes from the patient. He may not want a consultation at all; he may feel sure of his case; he may see it all in his mind; and he may regard any further advice as perfectly idle; but at the same time, if the patient, or, as is more common, if officious friends insist on having further advice, he had better have it; and then, if he has it—with whom? Any reputable physician with whom he can agree in therapeutics; but when one general practitioner wants another practitioner, what is the use of having a consultation if they believe in such opposite directions that they can't get together to as to prescribe the same medicine?<sup>5</sup>

Now, doctors have their quarrels, a great many of them; they have very bitter feelings toward each other. One's enemy, as one conceives it, perhaps may be the person selected by the family to be called in consultation. One may expect, if such a person is called, severe criticism may be made, or the confidence of the family undermined; but if all parties would observe that rule laid down in one of the earlier treatises, "No man ought ever to go to a consultation who carries into it any of his private grievances, or who can see in it anything but the case of his patient," then we would have no trouble at all. Now, when does a doctor want a consultation to protect himself? In doubtful injuries; with ill-minded people, contentious people, people who are likely to make trouble, people who are never satisfied with anything that is done for them. The doctor soon estimates that class of people: he sees a great many of them; he can select them and differentiate them in about five minutes after he is called;—and that is the class against which he is very wary, and the class against whom he seeks to protect himself.

Now let us consider one other thing. Don't call the consultant to such a job as this unless you warn him of what he is going to see. He is going to be in it as much as you; if there is to be a lawsuit the consultant can be sued as much as the attendant; and consequently it is not fair to lead him into this without giving him due warning; but no reputable man of good standing will refuse you in going to consult, or in going to help you in court, or to back you up, in any honorable way, in the profession. Doctors stand together very closely. Some one said to me once, that they never saw any Masonry like the Masonry of doctors. Doctors have to protect each other; not to the extent of doing wrong, but to cover up any misfortune of their brethren so far as they can, in order that the general respectability of the profession be preserved. It is right that it should be so.

Now, doctors, as I say, hang together very closely, and there are certain ethical relations that they ought to adopt and preserve to retain each other's confidence and respect. We used to hear a good deal in old times about stealing patients; we don't hear so much about that nowadays, because the idea that any patient belongs to any doctor has long since ceased to exist, on account of the great number of specialists, and patients frequently pass from one doctor to another; and such a thing as a lifelong doctor seldom exists in the larger communities. What happens is this: the

patients are variable; they wander about from person to person; and they think, unfortunately, that they have a good deal of medical knowledge which they do not have. They are taught by the newspapers and various forms of pernicious literature, that certain things are to be applied in certain cases, and they undertake to judge for themselves, generally coming to grief in consequence. Now I contend that the person who is constantly changing his doctor is very unhappy, just like a person changing his religion.

The class of things that doctors ought not to do towards each other are perhaps rather difficult to define; but they might be described as making remarks of a derogatory character, or innuendos, or insinuations, or inquiries in regard to a case in the hands of another physician, or the suggestion as to whether certain things have been tried. And, also, you should be very chary, I think, in showing too much attention to the patients of other doctors. Sometimes you get yourself considered very ill-natured and ill-bred on this account. Of course, you ought to have a certain reservation about visiting people in a friendly way while they are under the care of other physicians. It might seem at first sight, that this is of no consequence; but when you consider it, it is. The doctor goes to see a friend who is sick and sits down and talks with him; naturally the patient leads the conversation to his own condition; he imagines or makes up something which he supposes the doctor has said, which reaches the ears of the attending physician and perhaps wounds him; consequently the wider you can keep from other people's patients while they are sick, the better for all concerned.

I conceive it to be the duty of the doctor as a professional man, to help to take care of the poor; and for his interest to do dispensary and hospital work whenever he can get an opportunity. In doing this I consider it his duty to teach, if any one comes and wants to be taught; in other words, the functions of dispensaries and hospitals are not simply to take care of the sick, but to spread medical knowledge. These are the great fields where experiment can be made, where aggregations of cases can be collected together, where statistics can be of some value, where patients are held down by stern laws and severe discipline, where their cases can be compared as they cannot be in private houses. While we should bear in mind that the first duty of the hospital is to take in the sick and injured and care for them, and try to make them well, there is another, and perhaps as noble a function—to extend medical knowledge, and also to allow others to derive benefit from it, and to learn, if they wish to come to the hospital and be taught. It seems to me that the physician who takes a hospital position and does nothing but make his visit and never makes it public to others, does not fulfil his entire duty; for those who have any light in this respect certainly ought to give it to others. It is thus only that students can learn; it is thus only that young physicians can learn; and, I venture to say, that you will find in hospitals a good many older physicians, who learn much from these larger fields of sickness.

The doctor, in his profession, loses much of the benefit of his calling and does wrong if he does not visit medical societies and associations. If he holds himself aloof from his fellows he gets to be regarded as a singular person, and he does not get along so well. The same duty that leads him to teach in hos-

<sup>5</sup> McClelland on Civil Malpractice (p. 15).—"Among practitioners of the different schools consultations cannot be held, for the reason that there is a radical difference between them either as to the medicines to be used, or the manner of using them; hence, if the practitioners be honest in their several beliefs, no good can accrue to the patient, this being the sole object."



pitals should lead him to go to medical gatherings. They are of extreme importance; if possible, as much so as the hospital or dispensary.

To recapitulate, for a moment: We, then, should treat our patients always as our nearest friends; should preserve their secrets so far as the law will let us; should respect their confidence; should tell them the truth, unless it is going to injure them, and then should hesitate about telling them. We should, with our brother physicians, take extreme care in order that no suspicions may arise in their minds that we are suggesting anything in regard to their patients, or doing anything to make them lose their patients. We should never approach a consultation unless we can say fully that we have no feeling except for the best welfare of the patient. We should seek hospital positions because we can learn thereby; but having sought them, we should not hold them unless we are willing to teach, and impart some of that knowledge to others.

The doctor has certain duties which he owes to himself; and laying aside that very selfish mode of looking at the profession that we considered the other evening, still we must concede, even from a professional point of view, that the doctor must be paid in order to get his living, in order to sustain himself at all; and it is a part of his duty and right to collect his bills. Here comes in the great difficulty of the sliding scale of which I spoke in the other lecture, which is absolutely necessary on account of the peculiar status of his patients—some being poor, some middle-class, some rich. No one price can apply to them all. They all may go to the grocer's and pay the same price for a pound of sugar; but they cannot come to the doctor and pay the same price for medical attendance. The poor, being unable to pay for it, would be untreated, to the great injury of humanity. Consequently there must be a sliding scale from zero up; and a good deal of it must be zero. The doctor, in making out his bills and collecting them, must have regard to the circumstances of his patients; be just and merciful; but wherever people have any means, it is due to his self-respect to make some charge; and it is better for the patient as well as for the doctor.<sup>6</sup>

Questions frequently arise between physicians as to paying brother physicians for the care of themselves and families. It is the custom of doctors not to charge for such services; but it is the custom among some physicians, when a physician is called in, to arrange the matter by sending a present, or something of that kind. Others do not do so.

Now there arise many cases where doctors who are skilled in some special branch are called from a distance to see physician's families, and thereby lose a great deal of time from their regular practice. When a person is a specialist he may be called away a half a day or a whole day from his business. It would be a great hardship if the doctor was obliged to lose so much time without charge; consequently a rule was made that for visits to brother physicians which cost much time, one-half of the usual fee should be expected; and this seems to me very just.

Then, another rule in regard to the fees in visiting at a distance; and that is, that we should not charge by distance, but by time. Distance is not what it used to be. What takes now an hour used to take a day;

<sup>6</sup> Exorbitant fees injure the standing of the profession. Liberal fees, in consultation, are a protection to the attending physician. Small fees to the poor—but some fee—are the true course for the young doctor.

if you can get an express train and can run over forty miles in an hour and come back in another, what is the difference whether you do that, or drive eight miles out of town for an hour, and come back in another hour? Consequently charges should be based on time rather than on distance, to a reasonable degree.

The doctor, unfortunately, is frequently the victim of suits for malpractice. He cannot afford to compound those felonies. What is it to compound a felony? If a thief steals your watch, you can advertise and offer a reward for its return, with no questions asked. A doctor cannot do that in a threatened law suit. The moment he does that he has lost his self-respect, and the respect of the community. If he is sued for malpractice he has got to fight, and fight it to the bitter end. No suit for malpractice should be condoned or settled in any way, but should be fought out. As a rule, however long it is fought, the doctor will win his case. It is rare in Massachusetts that the jury will go against the doctor, in the long run, unless he proves to be a man of disreputable character. As a rule, the law is lenient, the law is just; and the interpretation put on it by most of our judges is rather on the side of the physician. It reads somewhat in this way: "The doctor is not obliged to be possessed of extraordinary skill; if it can be shown that he had ordinary skill, that he did his best to use the skill which he had, that the skill that he used on his patient was what is averaged by the medical profession in his vicinity; if it can be proved that he did not neglect his patient, that he did the best he could, then he cannot be cast in damages in a suit for malpractice." I have looked over the records very carefully, and the judges are uniformly fair, in their charges, to the doctor. Now, what brings these suits? Frequently surgical treatment, occasionally medical, more rarely obstetrical; but more frequently is this the case in surgery, because surgery is tangible and can be seen. If a man has a bad limb or deformity, all his neighbors see it, and by and by some one says, "Why, that is not so good as mine, that is not as good as it ought to be"; or, worse still, some other doc-

1 "The law requires of a man who offers his services in any profession, three things: that reasonable degree of learning, skill and experience ordinarily possessed by others of his profession; reasonable and ordinary care in the treatment of the case committed to him; and the exercise of his best judgment in cases of doubt. . . . A physician does not engage to warrant and effect a perfect cure. . . . When the jury are satisfied of reasonable skill and care, that is sufficient."—*Sargent, J., Verdict for Defendant, McClelland*, pp. 32, 33.

2 "What constitutes ordinary or reasonable care or skill, and what is the proof of it? It is not easy to say. As much cannot be expected of physicians in remote localities, where they are cut off from opportunities of improvement, as from a physician living in a community where opportunity is afforded of seeing disease and accidents under more varied forms; nor from this class as from physicians connected with hospitals, or who reside in large cities. If it were otherwise we should find but few physicians except in populous communities. The very favorable rule has been laid down in the law, that, the least amount of skill, therefore, with which a fair proportion of the practitioners of a given locality are endowed, is taken as the criterion by which to judge the physician's ability or skill."—*Bowditch Inst.*, § 1004, 1005, *McClelland*, pp. 18, 19.

3 "He is not responsible in damages for want of success, unless it is shown to result from a want of ordinary skill and learning and such as is ordinarily possessed by others of his profession, or from want of ordinary care or attention. He is not presumed to engage for extraordinary skill nor for extraordinary care; nor, can he be made responsible in damages for errors in judgment, or mere mistakes in matters of doubt or uncertainty."—*See J. Foster*, 460 (28 Maine, 97; 39 Maine, 155); *McClelland*, p. 43.

4 "The defendant is not liable for want of the highest degree of skill, but for ordinary skill."—*Seare v. Prentice*, 8 East, 348; *Chitty on Contracts*, 165.

5 "And, of course, only for the want of ordinary care and ordinary judgment. The practice of surgery is indispensable to the community; and while damages should be paid for negligence and carelessness, surgeons should not be deterred from the pursuit of their profession by intemperate and extravagant verdicts. The compensation to surgeons in the country is small, in comparison with what is paid in cities for similar services; and an error of judgment is visited with a severe penalty, which takes from one a larger share of the surplus earnings of life."—*Wells, J., McClelland*, p. 260.



tor inadvertently says, "That is not a very good result." Immediately his mind is disturbed, and he brings suit against the doctor. In the present state of the law, we consider this a great hardship, even greater than being obliged to tell secrets in court. Under the present state of the law the poorest person can go to court to get justice against the doctor without having to possess one cent; he can get some counsel to undertake the case for the sake of the prospective fees, and consequently he can sue the doctor without money and without risk. Meanwhile the doctor cannot afford not to defend it, and to defend it by good counsel; he is very foolish if he has poor counsel. At the end of the suit he comes out triumphantly, but with a loss of several hundred dollars; while the only person on the other side who loses anything is the lawyer, who has taken it up for what he can get.

We are all liable to be sued on the slightest provocation, and we must defend it. We are not the only ones who suffer; if you look at the records for actions of tort, as they are called, you will see that the courts are loaded down with them. Corporations, municipalities, individuals, merchants, business men, contractors and employers, are constantly blackmailed in the most shameful way; many of these cases they settle without allowing them to go into court. So that our profession is not alone or peculiar in this respect; only it seems to us very hard, when we have done the best we could, that we should be for a long while kept in a state of uncertainty and forced to pay in the end, although we get a verdict triumphantly in our favor. Now here comes in sometimes the importance of consultation, because if the patient has been seen in the beginning by other doctors; if they all agree; if they are sure what was the matter with him, and that what ought to have been done for him, was done, this would have great weight, and will possibly prevent a suit from being brought. That I have known to be so in some cases. But you cannot allow these suits to go without attending to them, because if a person yields to blackmail, all the hungry throng of sharks will mark him out as a prey, and he will have suit after suit brought against him, and soon will be entirely ruined. Moreover, on account of his self-respect he must stand for his rights. I do not think that any suit for malpractice will hurt a young doctor: in fact, sometimes it is an advertisement. It is not altogether an unmitigated hardship.\*

We now have been over the principal points: first, with regard to medicine as a trade; second, with regard to the conduct of life in medicine as a profession. If the first lecture showed it to be pretty hard, still I trust that this lecture will show a better side. I have merely told you thus far how close you are to your patient, how near you are to the sympathies and the confidence of the community; but I have not pointed out to you that you will soon realize in practice how acute the pleasure is to you if you succeed in alleviating suffering, prolonging the patient's life, and, above all, seeing the scale turn and mount upward in a case of acute disease. To see that is most intense

pleasure; and a severe case of this kind, although you may not have a great many of them at once, will give you all you want to think of until the scale is turned. You will also find among human beings with regard to the doctor, not only some ingratitude, but gratitude and friendship which will come back to you year after year, which will do you good in ways which you have not thought of, which will make you feel happy, and make you think that something you have done is worth living for. Ours is the noblest profession that exists; it is, above all, the most humane; it cannot be otherwise; we seek daily, and give our lives, to make people happier, to make them better, to alleviate their sufferings in every possible way. This reacts upon us; we share their joy; and we frequently also get more credit than we deserve for unexpected results; and although sometimes we have a great many anxieties in the event of unexpected deaths, yet these are evenly balanced by seeing others convalesce.

If any one goes into the study of medicine as a business without a positive love for it, he will be greatly disappointed; and no matter how far he succeeds in later years, yet it will all be perfunctory and mechanical. Unless one has from beginning to end a love for the profession, and a love of science, that is the only thing that will sustain one in these anxieties and disappointments; and that is the only thing that will warm one and encourage one in lawsuits under unjust accusations. After having studied medicine a little while, we find out that either we love it, or we do not love it; yet the love of science for its own sake is so entrancing and so charming, that it may beguile us on to where we shall afterwards love medicine.

There is nothing more delightful than the study of medicine; it is very different from the practice of medicine. The study of medicine is one delight from beginning to end. You begin with anatomy, and what is more delightful than the study of that subject for a year or two, in which you can see almost every mechanical law and mechanical device demonstrated; then you pass on from that to physiology, and see all the most delicate functions; and when you go on still further and notice them in sickness, and can reason on the causes and conditions of disease far better than you could before, and then apply remedies that will regulate and give relief, what study is more delightful? The horizon of knowledge ever recedes. You are just as much a student when you are eighty years old as when you are twenty. Surgery lately has advanced so far and so fast that it has distanced medicine, and is now, since the application of antiseptics, the most attractive thing; and this, of course, is limitless; but meanwhile, even now at this moment and henceforward, I am sure that medicine is going to resume its own place, and by and by maintain its supremacy, which it always should have over surgery. I have always said that the physician is superior to the surgeon; that he has a broader field to look over; that his knowledge must be more extensive to make him a good physician than a good surgeon. Now the physician is coming back; and he is coming back through the great advances being made so rapidly through the discovery of the antitoxins and of bacteriology. In ten years, I will venture to say, that medicine will be on as high a plane as it ever was. The resources of our profession are endless in delight; and if you find in the beginning that you love it, you will never cease to be happy in its pursuit.

\* In England a Medical Defence Union is in vigorous existence. It assumes the risks of suits for malpractice and defends them. It is a mutual insurance company of medical men. Here, an attempt was made in 1895 to secure the assent of the Massachusetts Legislature to the establishment of a Medical and Surgical Branch of the Employers' Liability Insurance Company. It failed, however. It is the opinion of some lawyers that the existence of such an association to defend the doctor, would turn the jury against him.

## Original Articles.

### THE ETIOLOGY OF OBSTETRICAL PARALYSIS.

BY G. L. WALTON, M.D.,

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THIS subject seems hardly to have received the attention it merits, either from the scientific point of view or with a view to possible prophylaxis.

Neither the seat of the lesion nor the method of its production has been absolutely determined, but the preponderance of evidence appears to establish the brachial plexus rather than the spinal cord as the point of injury. This view is favored more particularly by the distribution of the paralysis, and by the prognosis; absolute, though somewhat retarded, recovery being the rule in this affection, as opposed to anterior poliomyelitis, in which, if ever recovery occurs, it is the exception. The objection of Burr<sup>1</sup> that sensation is unimpaired does not militate strongly against the plexus theory when we realize the difficulty of testing sensation in early infancy and the fact that in peripheral lesions the return of sensation is generally less retarded than that of motion.

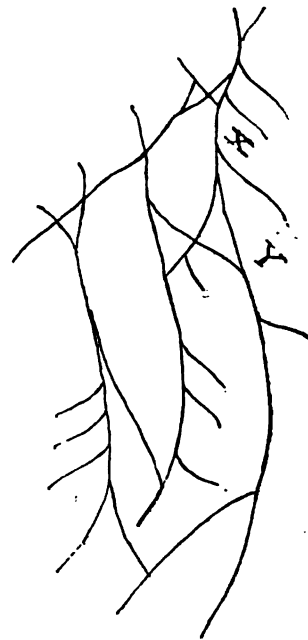
With regard to the method of production, the pressure of forceps, the hook, and the finger, on the neck, the pressure of the finger in the axilla, and over-extension of the arm, have been disposed of as essential causes by Carter, partly through experience, numerous cases having been recorded in which none of these factors were brought into play, and partly through theoretical considerations. It would certainly seem difficult seriously to injure the yielding brachial plexus from without, and in the event of sufficiently violent direct pressure so to injure the plexus, it would seem that external marks should be present. In point of fact, in one case in which this origin seems established, extensive ecchymosis was present.

The explanation offered by my late colleague, Dr. C. F. Carter,<sup>2</sup> appears quite as satisfactory as any offered up to this time; and at the time of the publication of his paper I accepted his view without modification, namely, that in head presentations, the separation of the head from the shoulder by the delay of the shoulder at the brim of the pelvis would naturally stretch the brachial plexus; cases occurring in breech presentations being explained by traction upon the shoulders to extract the after-coming head. Carter considered that the force of the extension expended itself upon the point of junction of the fifth and sixth roots of the plexus, the serratus magnus and rhomboids escaping through the higher origin of their nerve-supply. The escape of the branch to the pectoralis major was unexplained by this theory, for the suprascapular nerve, almost invariably involved, passes off above the branch to the pectoralis major. This unsatisfactory point, it seems to me, can be entirely cleared up by the modification of Carter's theory, which I would suggest.

That of stretching of the head away from the shoulder may produce paralysis of the shoulder group is illustrated by cases occurring even in adult life, as the result of falls upon the point of the shoulder occurring in such a way that the head is forcibly sep-

arated from it. Such cases have been reported, for example, by Phillips and Beevor. I have myself seen this lesion referred from the surgical to the neurological department in the Massachusetts General Hospital in several instances.

Oppenheim,<sup>3</sup> who considers the brachial plexus the seat of the lesion, calls attention to the importance of the *clavicle* as the resisting body against which the plexus would be pressed by the separation of the head from the shoulder. This explanation would be amply satisfactory if the lesion were generally limited to the deltoid, biceps, and coraco-brachialis, which Oppenheim apparently regards as the fact, this author alluding to the scapular muscles as only occasionally affected. My experience, and also that, I fancy, of most observers, would lead to the conclusion that the scapular group was almost constantly affected, the arm being almost invariably rotated inwards. The weak point already alluded to in connection with Carter's view, namely, that the branch to the pectoralis major escapes, appears also in Oppenheim's theory.



A glance at the diagram of the brachial plexus, arranged after Gray, will make these points more clear. The point at which Carter considered the stretching expended itself, is indicated by the letter X, the posterior thoracic and rhomboid branches, given off above this point, naturally escaping. The suprascapular, lying directly below the point X, would naturally receive the brunt of injury, the musculo-cutaneous and circumflex being also affected as far as those nerve fibres are concerned which pass through the fifth and sixth roots. The external anterior thoracic (supplying the pectoralis major) is the nerve, the exemption of which is unexplained either by Carter's or Oppenheim's theory. The point at which the clavicle crosses the plexus is indicated by the letter Y.

Coming now to the modification which I would suggest, the first point which is shown by dissecting the

<sup>1</sup> Boston Medical and Surgical Journal, vol. cxxvii, p. 235.  
<sup>2</sup> Obstetric Paralysis with Reference especially to the Pathology and Etiology. Boston Medical and Surgical Journal, May 4, 1893, p. 434.

<sup>3</sup> Quoted in Braithwaite's Retrospect, vol. cl, p. 249.

brachial plexus of a new-born infant, is the close apposition of the plexus to the sharp inner edge of the clavicle. It is also noted that the suprascapular, a very considerable nerve, leaves the plexus much higher up, and makes its way outwards and backwards to the suprascapular notch. This consideration has led me to believe that this nerve is independently stretched in the separation of the head from the shoulder, the distal point of fixation being either the suprascapular notch, or the outer edge of the scapular spine, around which the nerve immediately passes, or perhaps both. That the latter point is of special importance would perhaps be shown by the fact that the muscles supplied below the spine of the scapular, namely, the *infraspinatus* and *teres minor*, appear to receive the brunt of the injury. I should agree with Oppenheim regarding the rôle of the clavicle pressing upon the plexus directly below Erb's point, causing paralysis of the deltoid, biceps, and coraco-brachialis, as well as of the more extensive arm paralysis sometimes present.

My supposition would explain the escape of the branch to the *pectoralis major*, this nerve having no point of fixation, and impinging upon no bony prominences.

This method by which the stretching might be brought about by Carter's theory would be somewhat as follows: Suppose the position is occiput left anterior (O. L. A.). The right shoulder is retained at the brim of the pelvis to the right of the median line, through the comparatively transverse situation of the trunk at this period. The head meantime, passing down the strait, is not only forcibly drawn away from the shoulder, but is being *rotated* so as to bring the occiput under the pubes. This rotation turns the face away from the right shoulder, bringing the plexus therefore forward against the clavicle, and at the same time shortening the distance from the point of emergence of the plexus roots from the vertebræ, and the suprascapular notch, the latter point being absolutely fixed by the engagement of the shoulder at the brim of the pelvis. This matter of rotation has, I think, not been previously mentioned in this connection, but it would be an extremely important point if Carter's theory is accepted, as placing the plexus in a situation where comparatively little separation of the head from the shoulder can produce its maximum effect. The latter factor completes the injury by bruising Erb's point against the clavicle and the suprascapular nerve against the suprascapular notch and scapular spine.

The collected statistics are unfortunately meagre regarding the position of the head in cases of subsequent obstetrical paralysis. As far as they exist, however, they corroborate the theory that the stretching occurs at this period of labor, and in the manner indicated. The right arm should be the one affected in the left anterior position and the left arm in O. R. A. In point of fact, in the list collected by Carter, out of the five cases of head presentation in which the position was noted, three were occiput left anterior, with paralysis of the *right* arm, one of occiput right anterior with paralysis of the *left* arm, and one of occiput right posterior (which ultimately rotates to the left) in which the *right* arm was affected. In positions involving the after-coming head, the left arm was paralyzed in two cases, in one the right, and in one both arms, no fixed rule being of course applicable when both shoulders are drawn down.

In Lovett's<sup>4</sup> list, the head presentations are not noted except in a general way; in the one footling presentation in his list the left arm was paralyzed.

A case recently shown me by Dr. W. L. Richardson, to whom I am greatly indebted for assistance in investigating this question, tends to corroborate the theory. In this case neither forceps nor the finger in the axilla was used, the birth being normal and speedy. The position was occiput left anterior, and the paralysis affected the *right* arm.

In another case, seen in consultation with Dr. R. B. Dixon, the position was O. L. A., and the right arm was paralyzed.

In every case I have seen at the hospital, in which the position was known, the same rule has obtained.

In case, however, rotation is an important factor, the right arm should be the one affected in the vast majority of cases in which the position is unknown, as O. L. A. is the usual position. On the contrary, however, out of twenty-three successive cases in the record of the neurological department in the Massachusetts General Hospital, eleven were of the right arm and ten of the left, the other two cases being known to be breech presentation. It may be, therefore, that rotation is unimportant and that the delay of the other shoulder at the sacrum is equally in fault, the lateral flexion (in this case greater) being the important factor in stretching the plexus.

In view of this fact, I am still in doubt about the exact mechanism, but as firmly convinced that the injury to the brachial plexus is the important factor in etiology. Further observations with exact records of the manner of birth are desirable.

It is possible that this point could be further elucidated by placing the cadaver in the position described, and ascertaining with what force the nerves impinge upon the bony edges named.

With a view to determining this and similar points. Dr. John Thomas and myself have undertaken a systematic examination of infant cadavers with no definite result as yet, on account of lack of proper preparation for dissection in the cases so far examined. One point of interest we have established, however, namely, that when the body is placed in the position suggested, with the face rotated, and the head forcibly drawn away from the shoulder, the clavicle is brought up sharply against the dorsal curve of the first rib. This point of contact is, therefore, the probable seat of injury to the brachial plexus, excepting the suprascapular branches.

The only point in prophylaxis which has yet presented itself to the writer is the importance of hastening the birth when it is retarded in the second stage. In the case of Dr. Dixon, to which I have already alluded, the second stage was greatly prolonged. The waters broke early in the morning, but the child was not born till half-past eight in the evening, Dr. Dixon, on account of tardy summons, being present only half an hour.

A STRIKE AT JEFFERSON MEDICAL COLLEGE. — It is reported that the students at this institution refused to attend lectures on December 1st, owing to a rule posted three weeks before to the effect that all fees for the first half-term must be paid on or before this date. A few riotous demonstrations were also indulged in.

<sup>4</sup> Boston Medical and Surgical Journal, vol. cxxvii, p. 8.

## ON THE ACTION OF COMMERCIAL LITHIA WATERS.

BY CHARLES HARRINGTON, M.D.,  
*Instructor in Materia Medica and Hygiene in the Harvard Medical School.*

WHEN the licentiate Sedillo, old, infirm and racked with gouty pains, was obliged for the first time in his life to summon medical aid, he sent for the renowned Dr. Sangrado, who, after examining the patient, said: "The question is to supply the defect of perspiration which is obstructed. Others in my place would doubtless prescribe saline draughts, diuretics, diaphoretics, which for the most part comprise sulphur and mercury; but purgatives and sudorifics are pernicious drugs invented by quacks. All chemical preparations seem made only to injure. I use simpler and more efficacious means. If you had only drunk pure water all your life and had been content with simple food, baked apples for instance, pease or beans, you would not now be tormented by the gout, and all your limbs would have readily discharged their functions."

The good canon was then repeatedly bled and made to continually drink warm water, the abundant consumption of which Sangrado regarded as a true specific against all sorts of distempers. When, as the result of the too frequent bleedings, the old man expired, Dr. Sangrado observed that the patient had not been bled enough and had not drunk enough water.

After the death of the canon, Gil Blas entered the service of the learned leech who addressed him and the maid-servant thus: "Drink, my children; health consists in the suppleness and humectation of the parts. Drink water in abundance; it is a universal solvent; water melts all the salts. If the flow of blood is a little sluggish, water accelerates its motion; if too rapid, water checks its impetuosity. Water is a cure for all sorts of dropsies, and is just as good for rheumatism and the green sickness. It is also excellent in those fevers where the patient burns and shivers at the same time; and its effects are miraculous in diseases attributed to cold, serous, phlegmatic and pituitous humors."

The modern successors of Sangrado own lithia springs; those of the licentiate Sedillo buy their waters and drink them copiously. The founder of the Sangrado school showed as little diffidence in his claims for the universal solvent as do his successors, who, in their circulars to the profession and laity, assert that their various bottlings when consumed in sufficient amount are a safe and speedy cure for all diseases of the kidney, bladder and liver, indigestion, catarrh of the stomach and intestines, diabetes, constipation, sick-headache, neuralgia, fistula and piles, "pimples and blotches on the face, eczema, scrofula, hives and all skin diseases," insomnia, and excessive use of alcohol.

For the purposes of this paper and pending an investigation of the question as to the real action of lithium salts, a report of the results of which is to follow later, let it be conceded that these salts given in the usual doses produce the results claimed for them by recognized authorities, not owners of, or in any way pecuniarily interested in, lithia springs. Most of the statements as to the beneficial effects of the ingestion of salts of lithium are based on the observations of Mr. Alexander Ure in 1843, and of Dr. Garrod in 1857, the value and accuracy of which need not for the present be discussed.

Lithia treatment is usually associated with ingestion of plenty of water, and it is a common practice to prescribe the commercial lithia waters as a convenient as well as agreeable method of administration rather than lithia itself. The use of these waters is constantly growing, and the sale of some of them is phenomenal in extent. This is due in part to the readiness of the profession to accept without reserve the original statements concerning the action of lithium salts and the published analyses of the waters in the market, and in part to the credulity of the public, influenced by extensive advertising, and by the oral testimony of those who believe themselves to have derived benefit from their use. It is probable that the popularity of lithia waters is due more to the latter than to the former.

A. B., for instance, a high-liver with no active occupation, is afflicted with rheumatic or gouty twinges. With or without medical advice, he restricts his diet, eschews alcohol in all its forms, and puts himself on lithia water. The virtues of these popular beverages have been extolled by others who have practical knowledge of their wonderful power. In addition to the testimony of these, he has ocular proof of their marvellous efficacy in the published reproductions of photographs of fragments of calculi both renal and vesical, which, voided in the urine without instrumental aid, must have sorely taxed the calibre of the most capacious urethra, and inspire wonder that in their passage they did not lacerate that canal from end to end. Encouraged by what he has seen, read, and heard, he applies himself assiduously to the consumption of the potent water to the exclusion of alcohol, and eats plain food in moderation in place of his usual diet, a moderation due in part to his desire for relief and in part to the fact that it is not wholly to his liking and hence not likely to lead to excessive indulgence. He drinks lithia at breakfast and in the forenoon, a bottle or more with his luncheon, more in the afternoon, repeats it at dinner, again during the evening, and finally as a substitute for the usual "night-cap." As a result of his abstemiousness both as to food and alcoholic beverage, but in his own mind of his devotion to large volumes of the powerful solvent, his condition is soon greatly improved. He is more active in body and in mind; he is conscious of a renewal of health and strength. He is now a believer whose faith in lithia cannot be shaken, and he energetically advocates the drink wherever he may be. Moreover, he has now the supreme satisfaction of knowing that he can return to his former habits of life, and whenever necessary call to his aid the never-failing remedy. For prophylaxis, he will mingle the water with his favorite spirits, and continue the water-habit with his meals, though in a sub-acute form.

So great has become the fashion for drinking these waters that many brands are now on the market, but the great bulk of the business is done by the promoters of three. These are well advertised in the medical and daily press, in the popular magazines, and on bill boards and other media of communication to the public. They are prescribed by many of the profession who accept the published analyses without question as to their truthfulness, and who see the good results of their voluminous ingestion. What guarantee has the profession or anybody else that the results of analysis as published are true? The chemists who sign the reports may or may not be honest; but who can say that the samples submitted by interested persons have

been honestly put up? It is not conceivable that a business concern would publish an analysis adverse to its interests. The promoters of a lithia water are in business for pecuniary reasons and not from motives of pure philanthropy, and in order to establish a vogue it is necessary to publish analyses showing a large content of lithium salts.

The three leading, that is, most popular and best-advertised lithia waters, have been purchased by me in open market and analyzed; one of them, perhaps the leader of all, several times, and always with the same results. In giving publicity to the results I shall designate the several waters by numbers rather than by names, in order to prevent as far as possible the use of the results in unauthorized directions; for instance, in advertisements in which comparisons might be drawn by some new aspirant to popular favor.

No. I. This water is advertised as a most powerful solvent of vesical calculi, and as a cure for a number of generally considered incurable diseases. It proves to be a very pure water so far as organic matter is concerned, but with a considerable amount of dissolved mineral matter, chiefly sulphate and carbonate of calcium. While it is advertised as a powerful solvent for calculi, the greatest amount of bicarbonate of lithium claimed for it is but a little over two grains per gallon, an amount which, even if present, could hardly be regarded as of much use. As a matter of fact the specimen examined contained absolutely no trace of lithium salts.

The results of analysis expressed in parts per 100,000 are as follows:

Free ammonia . . . . .	0.0016
Albuminoid ammonia . . . . .	0.0009
Chlorine . . . . .	1.29
Fixed residue . . . . .	80.60
Volatile residue . . . . .	8.70
Total residue . . . . .	89.30
Nitrogen as nitrates . . . . .	0.0060
Nitrogen as nitrites . . . . .	0.0000
Hardness . . . . .	Excessive.

No. II. This water claims to be a cure for almost all the ills to which flesh is heir, and to contain over fourteen grains of lithium salts per gallon. It proves to be an exceedingly hard water, practically free from organic matter, absolutely free from lithia, but rich in undesirable lime salts. The results are as follows (parts per 100,000):

Free ammonia . . . . .	0.0152
Albuminoid ammonia . . . . .	0.0028
Chlorine . . . . .	24.10
Fixed residue . . . . .	268.10
Volatile residue . . . . .	41.10
Total residue . . . . .	309.20
Nitrogen as nitrates . . . . .	0.055
Nitrogen as nitrites . . . . .	0.000
Hardness . . . . .	Excessive.

No. III. This water, which is very extensively used in hotels, clubs and elsewhere, and which is claimed to contain over eight grains of bicarbonate of lithium to the imperial gallon in nearly ninety grains of total residue, proves to be a very soft and pure drinking-water, containing less than five (4.13) grains of total residue per imperial gallon, that is to say, less than half as much total residue as is claimed for the lithium salt alone. This residue is chiefly lime-salts, but it actually does contain a minute trace of lithium. It is marketed in the "still" and "carbonated" forms, and in either makes a most palatable beverage, which contains no more medicinal properties than do the

waters of Lake Cochituate. The results are as follows (parts per 100,000):

Free ammonia . . . . .	0.0016
Albuminoid ammonia . . . . .	0.0018
Chlorine . . . . .	0.20
Fixed residue . . . . .	3.90
Volatile residue . . . . .	2.00
Total residue . . . . .	5.90
Nitrogen as nitrates . . . . .	0.042
Nitrogen as nitrites . . . . .	0.000
Hardness . . . . .	1.000

All three of these waters are clear, colorless, and odorless. Two, by reason of excessive hardness, are not to be recommended for general household use; the other is a good water for all domestic purposes; not one can be said to be a medicinal water. The price of each is about twenty cents per quart.

In view of the above figures it appears most probable that the good results following their abundant drinking are due partly to the influence which can be exerted by any good drinking-water when taken in generous amount, and largely to the coincident abstinence from rich food and alcoholic beverages.

### SOME CASES OF HEMIANOPSIA, ONE OF WHICH WAS MONOCULAR.<sup>1</sup>

BY DAVID COGGIN, M.D., SALEM, MASS.

BLINDNESS of one-half of the visual field is a somewhat rare affection, as is not unlikely most of those present can testify. For example, no case was met with among the 4,200 eye-patients who were seen in the Salem Hospital during sixteen years of service.

In the Massachusetts Eye and Ear Infirmary 15,974 new eye-patients were treated in 1895, which seems to show that this is more largely attended than any other ophthalmic hospital in the United States. Yet but five cases of hemianopsia were recorded. In private practice, only seven such patients have been encountered by the writer. Five of these exhibited the common form, in which the inner half of one eye and the outer half of the other is affected. Six were men, and six of the seven patients were native-born. The lesion was apparently in the occipital lobe of the right hemisphere in one, and in the left in four, while in the last patient it was probably forward of the commissure (the record of one patient is missing). Two have died, and in neither case was an autopsy held.

CASE I. August 27, 1881. W. H. N., fifty-nine, master mariner, a man of full habit. "Health good," with the exception of rheumatism in his feet and some shortness of breath. Occasionally is dizzy, when his eye-sight becomes dim. Is a strict vegetarian. When busy he frequently goes without food for twenty-four hours.

Ten days ago he returned from the East Indies.

Three days later, while in a Boston restaurant, he became dizzy and could see only the forms of persons. He was taken to his home in Salem, and his physician was summoned. Consciousness was not lost.

Complains that he cannot see a street-car; for example, on his left side with either eye. Vision half of normal, but with a correcting-glass it is normal. Pupils act well. With the perimeter, a crescent-shaped scotoma was found in both eyes, larger in the left.

<sup>1</sup> Read before the Essex South District Medical Society, October 27, 1896.

The ophthalmoscope revealed no change within the eyes. A month later his distant vision was normal without glasses.

When out of doors, if he sneezes or coughs he has vertigo, and is obliged to lean on his cane. A plug of wax was removed from his left ear, which may have caused the dizziness.

Eight years later, Captain N. returned. Central vision normal. Area of blind spot unchanged. Health good. Diet of bread and water. Three years earlier, when in London, he was "examined during three hours," he said, at the R. L. O. Hospital at Moorfields. In 1890, he started as a passenger for Australia. On the voyage the master of the ship broke the mate, whose place was filled by Captain N. In Calcutta he was much exposed to the sun, and on his return voyage he had dysentery, which was attended by some head trouble. He died at sea. The history of this patient was most interesting and instructive to the writer, as, fifteen years ago, much less was known about hemianopsia than is true to-day, perhaps.

**CASE II.** 1882. A farmer of seventy. Homonymous hemianopsia of a week's duration. Record not found.

**CASE III.** March 23, 1889. Mr. P., age fifty-two, Retired from business. Four weeks ago, after a prolonged reading of Sunday newspapers (with his head inclined forward, while his "collar was too small," he being of a plethoric habit), he suddenly noticed a dark cloud, downward and outward, with his right, and downward and inward with his left eye.

Central vision normal, right eye. Left is astigmatic, corrected by a — 0.75 cylinder glass. Fundus of eyes normal. Bowels habitually constipated. No dizziness or pain. Area of blindness larger and less irregular in the right eye than in the left.

April 6th. The same. One attack of vertigo in the last fortnight.

Two years afterwards, his physician wrote that Mr. P. was feeling well, and that the scotomata, while unchanged, no longer annoyed him.

**CASE IV.** September 9, 1889. Mrs. R., forty-five (?), was seen in consultation. Intermittent neuralgia in right eye, brow and temple for ten days.

Yesterday found that "the sight of her right eye had gone." Left not affected. Patient in bed in a darkened room, and decidedly nervous. Physiological central cupping of the right disc, and pulsation of retinal arteries on pressing on the eyeball. If these could be called symptoms of glaucoma, certainly no others were present. Bowels much constipated, for which she is taking calomel. A pilocarpine and cocaine eye-water was prescribed.

Two days later she recognized fingers a metre off.

Pupil contracted, having used, after the pilocarpine, a solution of eserine sulphate (0.03–30.0), which had been left to use at her option. Is badly salivated, and very uncomfortable, because of sloughs in and about her mouth. Is much prostrated.

September 13th. Telephoned "much better."

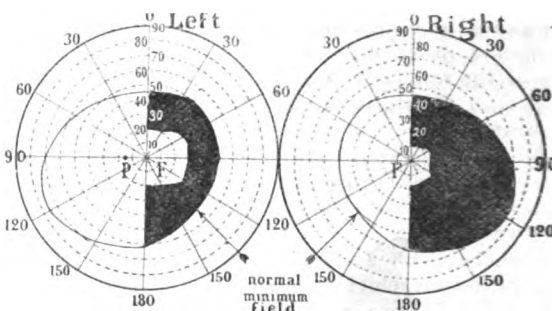
One year later, Mrs. R. appeared again. With a weak cylinder (— 0.75c, axis horizontal) vision for distance was normal, both eyes, as were the pupils, tension, field of vision, etc. Glasses for reading were ordered for her. In view of the history of the patient it was finally considered that the trouble had not been due to any structural change.

Later she moved to a city on the Great Divide.

In January, 1892, word came indirectly, that she was "nearly blind from glaucoma," so an ophthalmic surgeon said, while, in February, a neurologist affirmed the trouble was of the nerves; so no operation was done, as had been strenuously urged by the former practitioner.

She returned to Massachusetts the following year, and was seen on the 16th of February, when, with her glasses, her central vision was normal.

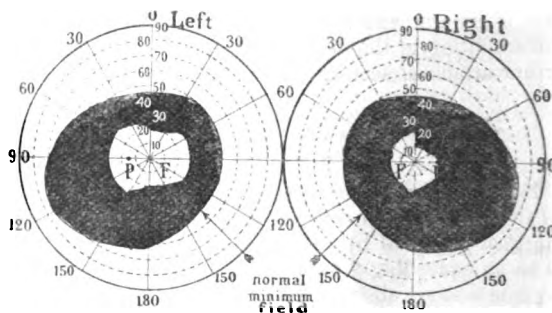
But she had homonymous hemianopsia — more of the right eye, as is here shown.



There was no history of any head disturbance when it appeared.

October 18th. Right pupil dilated and fixed "a long while." Reads but little, owing to confusion in head. Gait unsteady — no more so with eyes closed. Normal knee-jerk. Atrophy of both optic nerves.

When West, was said to have had optic neuritis. Field of vision now much contracted.



In November, with her glasses, vision was still about normal (0–1.0) and read—Sn. "50" easily. Very despondent. Is disinclined to use her eyes. A sister has been similarly affected for years, and still retains central vision, such as is had in looking through a spy-glass.

**CASE V.** November 30, 1890. Physician, forty-seven. Scotomascintillans fourteen years or so, at rare intervals, and apparently associated with abstinence from food. Both near and distant objects would appear distorted, as when a normal eye looks through a cylindrical lens, and a severe headache would follow the return of regular vision, and persist for several hours. No rheumatic history up to the above date, but since then several attacks of lumbago. Arcus senilis noticeable.

On this day he went early into the country to perform an operation, and he returned to his home in the late afternoon; not having lunched *en route*, he had an attack of distorted vision, which persisted after the pain had appeared in his head. His right eye was observed to converge. He lay down, and later walked

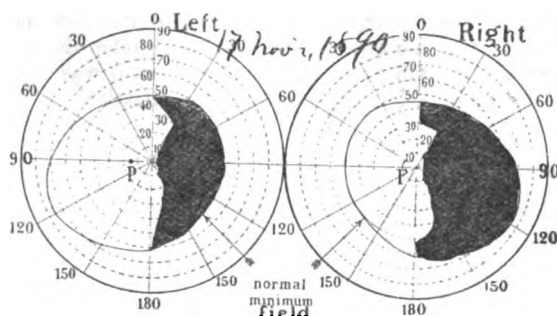


into an adjoining room, where he was shortly found in bed insensible and breathing stertorously.

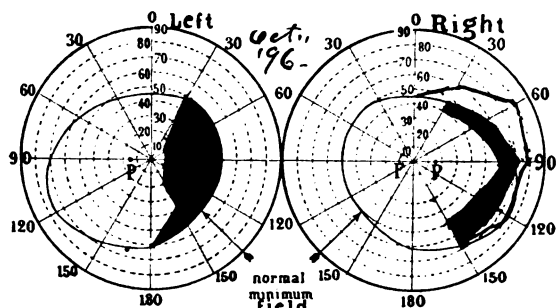
On becoming conscious at the end of half an hour, he was at first unable to articulate distinctly, and later a slight degree of aphasia was noticed.

Violent emesis began, and lasted for twelve hours. No motor paralysis, though his physician thought the movements of the right arm were restricted.

Certainly pain and numbness were complained of in the vicinity of the right brachial plexus for many months afterwards. After the lapse of a week, on attempting to move around his room, he found he could not see to the right with either eye: the blind area being greater in the right eye. Central vision and color-sense normal. External rectus muscles rather weak on testing with Maddox's rod.



October, 1896. After the end of nearly six years, it appears the area of blindness has greatly diminished in the right eye. On the temporal side of the scotoma there is enough vision to allow fingers to be counted. The condition of the left eye has changed less. No further attack of scotoma scintillans.



CASE VI. October 6, 1888. J. K., forty-eight, Ireland, master printer. Diabetes for four months; he also has albuminuria. One month ago, he put aside his glasses, being able to read easily without. Vision now of  $\frac{1}{2}$ , but with suitable convex glasses it is normal, for both near and distant (with +5 and +2.5). Media clear.

February 20, 1892. Two years ago had hemiplegia, left side paralyzed.

One week since, vision became affected within twenty-four hours so he was unable to see to his right, with both eyes, as is shown in these figures.

Lenses still clear, but as much weaker glasses are preferred for both near and distant vision, it is likely that later they will become opaque.

Death occurred on the 11th of July, 1893. Glycosuria and albuminuria persisted till the end. Five weeks previous to his death he had another attack of

hemiplegia (left). He became blind and unconscious prior to his decease.

CASE VII. September 7, 1896. Monocular hemianopsia. Mr. B., about fifty-five, book-keeper, a man of fine physique.

While writing, six days before, he noticed his vision suddenly obscured in the inner half of his right eye, which was accompanied by a sensation as of water trickling over the eyeball. No pain or dizziness, and he never had suffered from headache or any rheumatic trouble.

He was hypermetropic, but with glasses his vision was normal, as was his color-sense. Pupils small, so that the affected eye was dilated with homatropine muriate, but no lesion was revealed on using the ophthalmoscope.

With the perimeter an area of blindness was found on the temporal side, in the form of a right-angled parallelogram, and which extended from the periphery to within  $20^\circ$  of the centre of the eyeball and about  $10^\circ$  up and down.

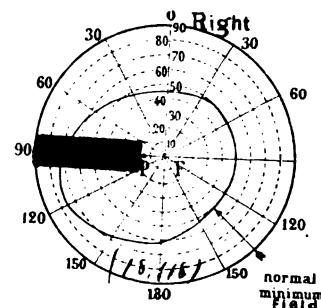
October 11th. He no longer notices the trickling, but occasionally, when reading, he has a feeling of something rising along his spine to his neck, which passes off on sitting up and bracing his shoulders, as he terms it.

Now recognizes a candle on the outer border of the scotoma, but is unable to count fingers in the same location.

In the apparent absence of hysteria, it seems probable that there was a lesion anterior to the chiasm. This accident is one of great rarity. One or two cases have been reported abroad. As this man's vision is already improving, it is not unreasonable for us to suppose that it may ultimately be nearly, if not fully restored.

Cases IV and VI can hardly be called examples of simple hemianopsia, but being of not a little interest they have been reported here. Of late, foreign observers have thought that attacks of scotoma scintillans sometimes precede this trouble, which is supposed to be located in or near the cuneus. This symptom was present in only one of this little group of patients. Here there probably was a hemorrhage in the occipital region although at the time and even for some months subsequently pain was referred more to the left parietal. This was more noticeable when the patient was fatigued. All of these patients complained of the inconvenience of walking on the street—almost amounting to agoraphobia with some of them—but which was less annoying when they were in the midst of the familiar surroundings of home, though even then, when at the dinner-table, their mishaps, owing to their lateral loss of vision, were sometimes mortifying.

No special line of treatment was followed in these cases. The bromides and laxatives were given as called for, and the patients were told that, after a time, they would become accustomed to their new and limited field of vision, which might become enlarged with the lapse of months.





### Clinical Department.

#### EMBOLISM OF CENTRAL ARTERY, MACULA SUPPLIED BY A CILIO-RETINAL ARTERY, RETENTION OF CENTRAL VISION.<sup>1</sup>

BY O. F. WADSWORTH, M.D., BOSTON.

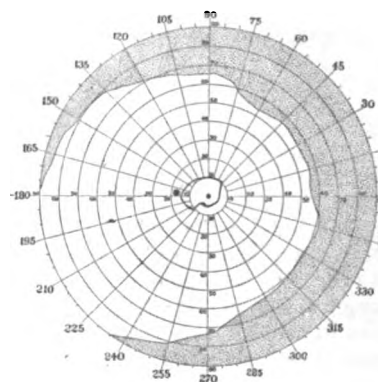
At the meeting of this Society in 1890, I reported a case of plugging of the central artery of the retina in which the macular region was supplied by a "cilio-retinal" artery and central vision was preserved. In the *Jahresbericht für Ophthalmologie* for that year the reporter on diseases of the retina appended to the title of my paper a note, stating that in his opinion the case was without doubt one of tubercular meningitis of the optic nerve. It is difficult to understand how this diagnosis was reached, for in the case as published there was no symptom pointing to either tuberculosis or meningitis, unless indeed a transient headache at the time the defect of sight was first noticed is to be regarded as such.

The case presented to-day offers a striking similarity in its essential features to the earlier one. There was the sudden onset and marked permanent concentric contraction of the field, with retention of good central vision: the white haze involving disc and retina for a long distance, but leaving the macular region and the space between it and the disc free; the evidence of disturbed circulation in the retina; the "cilio-retinal" artery supplying the macular region. But there were differences in detail. In the earlier case there were certain areas at the edge of the unaffected region about the macula on which the white haze was decidedly more dense in appearance than is usually found when the artery is stopped, and there was for a time an interruption and oscillation of the red blood column in two of the veins. Neither of these appearances were observed in the later case. The first case was considered as one of thrombus because no lesion of the heart or great vessels was discovered; in the second a lesion of the aortic valve gave opportunity for the formation of an embolus.

A lady of sixty-eight years, in good general health, slipped and fell on the ice about noon on January 31, 1896. She was moderately jarred by the fall, but got up without assistance, and there was no disability. During the following evening she two or three times noticed a blur before the left eye, and the next morning observed that the field of vision in that eye was much contracted and seemed to have a somewhat jagged border. There was no pain or redness. She saw her physician, and drops were applied which dilated the pupil. The condition remained unchanged till she consulted me, on February 5th.

L. E. — Pupil rather large; anterior chamber of good depth; iris natural; tension normal; vision with — 50,  $\frac{3}{8}$ . The field is much contracted in all directions, least outward. There are a few fine opaque striæ in the lens. The central artery rises to the level of the retina before division; its branches from their point of origin seem decidedly narrow. Close to the outer and lower edge of the disc an artery of moderate size enters, as from the scleral circle, and curves downward and outward to rise again just beyond the centre of the macula; about one P. D. from the disc it gives off a branch which runs upward

and outward and which again sends off a branch to run nearly horizontally outward. On the disc and around it, except on the temporal side, a white haze extends for a long distance, gradually fading; near and on the disc the haze partially hides the vessels; above the macula a few fine vessels stand out sharply on it. From the disc edge outward an area of the retina which includes the macula is quite free from haze. The border of the haze bounding the lower side of this area lies a little below the cilio-retinal artery described and is not very sharply defined; above the area the edge of the haze is fairly sharp, from the edge of the disc it at first curves outward and somewhat downward to about the level of the centre of the disc, then recedes upward and again descends to run nearly horizontally a little above the centre of the macula; beyond this and to the outer side of the macula the haze is thin and its border is quite ill-defined. At this visit no attempt was made to take the field accurately. On three subsequent visits it was taken with care and showed practically no variation.



R. E. — A few fine opaque striæ in the lens; in all other respects normal; vision with — .75 cylinder axis 90°,  $\frac{3}{8}$  —.

Dr. V. Y. Bowditch kindly examined the patient, and found a slight hypertrophy of the heart and a murmur over the aortic valve indicating slight roughening or stenosis.

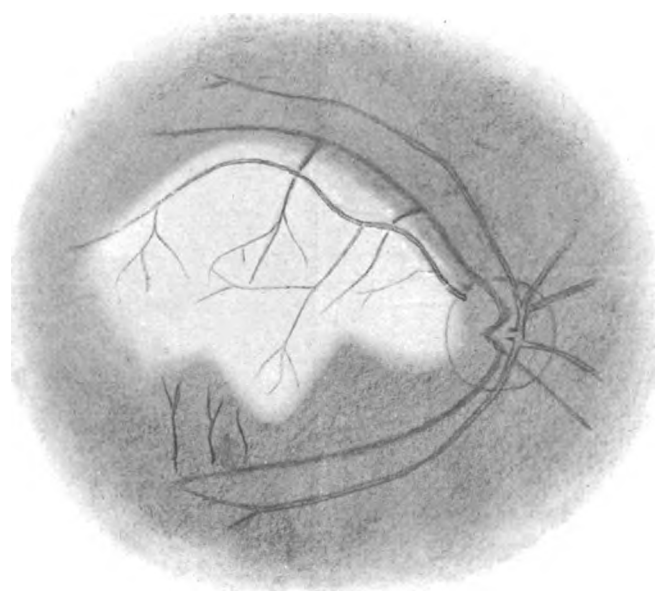
February 8th. Little change in the conditions. Two minute hemorrhages have appeared at the outer edge of the disc. Field as shown in the figure.

February 14. Vision with + 50 cylinder axis 70°,  $\frac{3}{8}$  —. The haze is in general decidedly less; the arteries generally are seen more distinctly and appear slightly larger than they did at the first visit, but the inferior- and superior-temporals still seem less large than normal, although perhaps not out of proportion to the corresponding veins. Of the two hemorrhages noted on the 8th the upper has gone, the lower is now faint.

A week later, February 21st, and three weeks after the loss of sight, V =  $\frac{3}{8}$  —, field as on the 8th. A little haze remains visible above the macula, elsewhere there is hardly any. There is a dot of hemorrhage a short distance outward from the disc, a small striated hemorrhage downward and outward.

The lady lived at a distance from Boston, and was to go South shortly after this date. I expressed a desire to see her on her return; but as I was obliged to say that there was nothing to be done for the eye, it is perhaps natural that she did not visit me again.

<sup>1</sup> Read at the meeting of the American Ophthalmological Society, July, 1896.





In a note dated July 17th, the patient writes that she thinks there has been no special change in the conditions of the eye; that she is able to use her eyes as much as she wishes.

Embolism and thrombosis of the central artery are not very rare, cilio-retinal arteries are sufficiently common, and it is to be expected that the two conditions should occasionally coincide. That one observer should have had the fortune to meet two instances of plugging of the arteria centralis in which owing to the presence of a retino-ciliary artery the macular region has been free from haze and central vision preserved, would indicate that others must have occurred. I have made no special search, but do not remember to have seen such cases reported. There have been described instances in which a small area adjacent to the outer side of the disc has been free from haze and a small amount of vision retained.

NOTE.—Since reading the above paper Dr. Knapp has kindly called my attention to two cases reported briefly by him (*Bericht der oph. Gesel.*, Heid., 1885), and an article by Laqueur (*Arch. f. Augenheilk.*, 1885, German edition). In both of Knapp's cases the haze involved the macula; vision was of small amount at first; in one case fingers at 6 M., later rising to 1; in the other sinking to 0. In Laqueur's case a band of retina from the outer edge of the disc to the periphery was free from haze; V. at first  $\frac{1}{4}$ , later 1. Laqueur collected 14 reported cases, including Knapp's. One, Mauthner's (V. 1), was first seen four months after the attack, too late to determine the original condition. In all the others the haze invaded the macular region; the free space next the disc was generally quite small; V. at first from light perception to  $\frac{1}{100}$ , eventually 0 to  $\frac{1}{4}$ .

#### ACUTE SUPPURATION OF THE MIDDLE EAR, FOLLOWED BY CARIES OF THE FALLOPIAN CANAL AND FACIAL PARALYSIS. NO INVOLVEMENT OF THE MASTOID CELLS.<sup>1</sup>

BY FREDERICK L. JACK, M.D., BOSTON.

THE following case came under my charge in January, 1896, and illustrates a very rare complication in suppurative otitis.

B. C., a man about forty-five years of age, had been having pain in the right ear for nearly six weeks. A discharge from the ear in the first few days gave temporary relief. After that he was fairly comfortable for several days, when pain returned, increasing in severity, and intense the last ten days. The temperature taken by his family physician was normal most of the time. At the end of the fifth week there had been suddenly noticed complete paralysis of the right side of the face.

When he came to me he was much debilitated, and described his sufferings as intense. There was a slight discharge. The membrana tympani was perforated in the posterior lower quadrant, no swelling in the canal. Mastoid tender on firm pressure over the antrum and tip, but without redness or swelling. Hearing fair; tuning fork by bone heard loudest in the affected ear.

It was decided to open the mastoid. The patient entered a private hospital, and was operated upon the following day, January 3, 1896. The drum membrane was first incised. The usual mastoid incision close to the insertion of the auricle showed the mastoid cortex to be absolutely sound and hard. The bone was opened with mallet and chisel, and the cells found perfectly normal. The cell walls were broken down by means of a curette, and an irrigating fluid passed freely from mastoid to ear. No pus or any indications of morbid

products, although the opening was fully one-half inch in depth. As the symptoms pointed so conclusively to pus or pent-up necrosed tissue, it seemed best to extend the opening, if possible, into the Fallopian canal. This procedure was the more readily determined upon as the function of the facial nerve was evidently destroyed. I, therefore, chiselled deeper, about one-quarter of an inch, and penetrated through into a small pus cavity. A fine probe passed anteriorly towards the ear and posteriorly behind the inner table of the mastoid, showed the bone to be softened in both directions. The opening was carefully enlarged in the directions indicated, and curetted. After irrigating the wound with a 1 to 4,000 solution of bichloride of mercury, the cavity was loosely packed with iodoform gauze, and an antiseptic dressing applied. The pain was promptly terminated by the operation. Temperature 100° F. for twelve hours, when it dropped to normal and never went above 99° F. Detailed notes of the convalescence it is not important to give, sufficient to say that the wound was treated in the usual way, and healed rapidly. The facial paralysis has at the present time disappeared.

### Medical Progress.

#### REPORT ON PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

#### MARAGLIANO'S ANTITOXIN-SERUM TREATMENT OF PULMONARY CONSUMPTION.

IN a leading article of the *New York Medical Journal*, August 15, 1896, the writer states that Dr. Zaelelin, of Genoa, in a paper on "The Serum Treatment of Pulmonary Tuberculosis" remarks that the serum treatment consists essentially in introducing into the human body substances which either of themselves oppose the germ of the disease or lead to the formation of such materials (antitoxins) in the organism. Animals have been treated with tuberculous matter in order to engender large amounts of antitoxins in their blood. For this purpose Maragliano used cultures of the tubercle bacillus, but without living bacilli; Behring, Wernicke, Knorr and Niemann employed tuberculin; Babes and Broca made use of the bacilli of the tuberculosis of birds, human tuberculin, and dead or attenuated cultures of the human bacillus; and Paquin used "cultures" from tuberculosis. The serum of animals systematically treated with any of these materials annuls the action of tuberculin. Maragliano first announced this with regard to his product, in August, 1895. The writer goes on to say that the use of Maragliano's serum has passed the experimental stage and may safely be received into practical therapeutics, for the dose in antitoxic units is adjustable and calculated for long periods and the use of the remedy rests on adequate clinical observation.

For the inoculation of animals, Maragliano uses the filtrate of cultures that have been heated, as well as that of those that have not been heated. The first are prepared by steaming highly virulent pure cultures at a temperature of 212° F. for three or four days, and then treating them in the same way as is done for producing Koch's tuberculin; the last are filtered through a Chamberland filter at the ordinary temper

<sup>1</sup> Read before the American Otological Society, July, 1896.

ature, and then placed in a vacuum with the temperature never above 86° F. The first product contains all the toxic elements that resist heat, that is, the bacterial proteins, or tuberculins; the second contains the tox-albumins, which do not bear heat, and tuberculin also. As all cultures are not equally toxic, an unchanging toxic unit has to be established, in order that the animals may be inoculated uniformly. This is done by greater or less concentration of the filtrates, and the unit consists of a weight to kill a healthy guinea-pig of a certain weight. Three parts of the heated and one part of the unheated filtrate are employed in the inoculations, the operator beginning with two milligrammes for each kilogramme of the animal's weight, and increasing the dose regularly by one milligramme daily until it reaches from forty to fifty milligrammes, at which it is to remain. Dogs, asses and horses are used, and the inoculations are continued ordinarily for six months. The animal will then withstand large doses of virulent cultures, even by intravenous injection. Blood is not taken from the animal until after a pause of three or four weeks in order to be certain that the serum contains no residue of the poisonous substances that have been injected. The serum is separated and treated according to the ordinary method.

In a healthy person the curative serum as such has no effect on the temperature, but like any other animal serum, even that of animals that have not been inoculated, it may cause a rise of temperature in certain individuals, especially if used in large doses, but this rise is not the result of its coming from an inoculated animal. The curative serum has no direct influence on the circulation; but when the general condition of a tuberculous patient improves after a series of injections, the pulse grows correspondingly slower and fuller. The increase in the number of leucocytes in the blood is often striking and the number of the red corpuscles and the amount of the hemoglobin also are increased in proportion to the improvement of the general condition. Generally speaking there is no perceptible effect on the urine but when a large dose, as much as ten cubic centimetres is given at one time, temporary peptonuria may occur, but never glycosuria nor albuminuria. The appetite and weight are almost always increased. If the loss of flesh has been small, there will be but little increase, but in very emaciated persons the gain will be striking, amounting in some instances to as much as thirty pounds.

The chief local effect resulting from this treatment is elicited by auscultation and is a diminution and final disappearance of the râles; subsequently the areas of dulness diminish or disappear. These effects occur even in cases where no other measure has been of any avail and whether or not there is fever and whether or not heredity is playing a part. Sometimes a tendency toward cure is perceptible within a few days and usually in the course of a month if the process is not too far advanced and too many other bacilli are not present. Slight fever usually disappears slowly when the treatment is carried out according to Maragliano's directions; high fever may abate and, if the progress of the case is to be favorable, subside entirely. Very high fever and the sub-continuous fever which occurs in the final stage may be reduced or overcome if large doses of the serum are employed—but this effect is not constant and generally not lasting.

A tolerably constant effect is a gain in weight, even

if the fever continues. As the other symptoms are ameliorated, the number of tubercle bacilli in the sputa becomes reduced, slowly of course in severe cases; finally they disappear entirely and not merely for the time being, provided the treatment is energetic and sufficiently long continued. After further treatment there is a sharp appetite, the patient takes long walks without exertion or fatigue and does not get out of breath, and the sleep is long and restful.

Maragliano divides all cases of pulmonary tuberculosis into two great groups: the first is that in which Koch's bacillus is the only micro-organism, or almost the only one found in the sputa; and the second, in which there is an abundance of other microbes, such as streptococci, staphylococci and the diplococcus of pneumonia, constituting what he calls "microbial associations." In the latter the cure, although not impossible, is difficult and protracted. After learning to which of the two great groups a given case belongs, four other considerations must be taken into account; namely, the quality of the disease (whether there is only catarrh or infiltration, whether the infiltration is compact or disseminated, whether there is a tendency to caseation or cirrhosis and whether or not there are cavities), its quantity (the amount of tissue diseased), its intensity and the patient's general condition. All these data are of importance in the prognosis.

Maragliano's statistics relate to 445 cases, including the 82 that he reported in August, 1895, those recorded or reported to him by other Italian physicians, and a few contributed from France and Austria. The cases are divided into six groups: (1) patients with destructive broncho-pneumonia and cavities, 105; (2) patients with destructive broncho-pneumonia without recognizable cavities, with "microbial associations," 85; (3) patients with diffuse febrile pneumonia with or without a destructive character, 120; (4) patients with diffuse non-febrile broncho-pneumonia with or without destruction, 47; (5) patients with circumscribed febrile broncho-pneumonia, 54; (6) patients with circumscribed apyretic broncho-pneumonia, 34; total, 445. The results of treatment are summarized as follows: The fever disappeared in 176 out of 322 cases—in 55 per cent. of cases of broncho-pneumonia with "microbial associations"; in 32 per cent. of those of cavities; in 48 per cent. of those of diffuse broncho-pneumonia; and in 86 per cent. of those of circumscribed broncho-pneumonia. The local signs disappeared in 27 per cent., were improved in 41 per cent., were unchanged in 30 per cent., and were aggravated in 6 per cent. (This adds to 104, *sic* in Dr. Zaeslein's article). There was an increase of weight in 57 per cent. The tubercle bacilli disappeared in 43.2 per cent. of the total number of cases, in 54 per cent. of the febrile broncho-pneumonia, and in 88 per cent. of the non-febrile, circumscribed broncho-pneumonia.

Generally a cubic centimetre of serum was administered subcutaneously every other day, and the temperature was carefully observed. As a few persons are sensitive to this dose, half a cubic centimetre may be given to begin with. Such persons may be recognized by a febrile reaction on the injection of two cubic centimetres of a physiological salt solution. There was neither a rise in temperature nor any other disturbance in the great majority of cases, even when the treatment was continued for many months. If a rise of temperature occurred the treatment was stopped until it fell, but even in such a case, a definite apyrexia

occurred in time. When the treatment failed to affect patients who had high fever and were in bad general condition, from five to ten cubic centimetres of the serum were given every fifth day; when three or four such injections had been given without avail, it was thought useless to continue with them, and the ordinary plan of using small doses was resumed.

The serum should be continued until a cure (Maragliano means by cure a "provisional cure," which is manifested by the disappearance of all subjective symptoms and all physical signs except dulness on percussion) results; then two injections a week should be given for two months, and after that one injection a week for a year. The back and the side of the chest are to be preferred for the injections, which are no more painful than injections of morphine; occasionally a little swelling occurs, but it subsides in a few days; rarely there is urticaria; no other ill effects are observed. The serum is described as clear and free from flocculi and sediment.

#### THE USE OF DIPHTHERIA SERUM IN OZENA AND CHRONIC PURULENT OTITIS.

In an article in the *New York Medical Journal*, August 15, 1896, the writer says that Professor Gradenigo, of Turin, in the *Therapeutische Wochenschrift* for July 26th, accepts the theory of the infective character of ozena and recognizes Belfauti's bacillus as its cause. He has used the anti-diphtheritic serum in 32 cases of ozena because of the close resemblance in effects between this bacillus and that of diphtheria. In one-half of these cases the formation of crusts and the fetor disappeared, and in the other half there was tangible improvement. Most of the cases were of long standing, and other treatment had been tried without avail. In the first half the duration of the treatment was from fifteen to seventy-two days, the number of injections from four to thirty-five, and the number of units of serum used from 5,200 to 48,000. Mild, local or general reactive symptoms occurred in almost all these cases, and attacks of bleeding from the nose was observed. In the second half, those that were approximately cured, the treatment was continued from thirty to sixty-eight days, and the number of units employed in an individual case ranged from 5,200 to 27,200. In all these cases urticaria, edema at the site of injection, etc., followed after a certain number of injections, but were of brief continuance.

Two of Professor Gradenigo's ozena patients had chronic purulent otitis also, and the serum treatment likewise had a favorable effect upon it. Professor Gradenigo considers Belfauti's discovery of the bacillus of ozena important in general pathology, and of great practical benefit in treating the disease.

#### PYROZONE AND DILUTE HYDROCHLORIC ACID IN SUPPURATING INFLAMMATIONS OF THE MIDDLE EAR.

Dr. William Cheatham<sup>1</sup> states that he desires to attract the attention of physicians to the line of treatment that has rendered him the best service in this sometimes most obstinate affection.

The first case which he cites had had suppuration of the right ear for many years; there was some edema and tenderness over the mastoid, also some discharge through the Eustachian tube into the throat. The

discharge from the ear had a very disagreeable odor. The auditory canal was much swollen and very tender. Hot applications and hot douches of carbolyzed water soon reduced the edema, and gave freer drainage. Dr. Cheatham after partially relieving the stenosis of the auditory canal, removed with curette and pick large cholesteatomatous masses, and found the middle ear and contents swept away, and in its place a large funnel-shaped cavity, basin and apex at about half-way of auditory canal, which at this point was still much contracted. The curette, chromic acid, pyrozone and many other remedies were used, but the epithelial masses still collected. Formalin, boric acid and alcohol were tried with the same result. Dr. Cheatham then had ten drops of a mixture of dilute hydrochloric acid (ten drops) and pyrozone (one ounce) put into the ear morning, noon and night, after first cleansing. A marked change was noticed in a few days, and in a short time there was no secretion from the cavity. There has been no return in several months.

The second case described was treated about the same time as the first. This patient had had suppuration of the right middle ear for twenty years, and it proved to be attic disease with bone necrosis. Above the middle-ear cavity proper, and not communicating with it, was a large cavity which was filled with inspissated pus and necrosed epithelium. Rough bone was felt with the probe, and small pieces were detached with the curette. After trying various remedies, the same or similar to those used in the first case, Dr. Cheatham ordered ten drops of the same mixture of hydrochloric acid (ten drops) and pyrozone (one ounce) to be put into the ear one, two or three times daily, to be left in five minutes after having been forced in deep by firm pressure upon the tragus, and then the ear wiped dry with absorbent cotton. This case in a few weeks began to improve rapidly, and went on to recovery without relapse. Dr. Cheatham has treated several similar cases with but one failure, and that was a tuberculosis patient. He has also treated many cases of less severity with only an occasional failure, and has never yet seen the treatment fail in acute cases. The writer states that in the primary stage of acute cases such medication is contra-indicated, but after pain, throbbing and swelling have subsided and suppuration continues notwithstanding ordinary treatment, the acid and pyrozone check it very promptly.

Dr. Cheatham has found that for drainage the iodoform or some other of the gauzes cut into narrow strips, lately advised by several, have given him by far the best results.

Under the use of acid and pyrozone, the writer finds the mastoid-cell involvement much less frequent, and he does not believe that these effervescing preparations increase such dangers.

[The treatment pursued by Dr. Cheatham is another clinical illustration of the principle enunciated by me regarding the action of neutral solution of hydrogen dioxide, that is, pyrozone, and of hydrochloric acid upon the streptococcus pyogenes, in an article published in the *American Journal of Medical Sciences*, July and August, 1895, entitled "Observations on the Diagnosis of Diphtheria." One paragraph will illustrate some of the points discussed therein:

"The general principle in antiseptics which my studies have brought out, and which I believe to be a new one, is the advantage of mixing the stronger germicides with hydrogen dioxide, a substance which

<sup>1</sup> Medical Record, September 12, 1896.

has the special property of disintegrating some kinds of dead organic matter, such as pus or certain portions of false membrane, thus rendering the bacilli more accessible, and so opening the way for the action of the stronger germicides. Pure hydrogen-dioxide solutions, or rather neutral solutions, are comparatively weak germicides, but we may put with them any compatible germicides, or use them alternately with an incompatible one, the choice depending upon the micro-organisms we desire to kill. For instance, the mineral acids which are found in all the ten-volume hydrogen-dioxide solutions sold in the market increase the germicidal value of these solutions. A twenty-volume, or even a forty-volume, neutral solution of hydrogen dioxide will not kill all the streptococci in ten seconds, but a weak solution of hydrochloric or nitric acid will do so. Tests, therefore, of the germicidal value of the hydrogen-dioxide solutions should always take into account the kinds and amount of free acid present." — F. H. W.]

#### ANTITOXIN FOR THE TREATMENT OF DIPHTHERIA.

[The importance of using only the best quality of antitoxin and of the strength which it purports to be cannot be too often emphasized. It is necessary to be equally careful in regard to our other remedies although with few of them may a poor quality be followed so quickly with such dire results. — F. H. W.]

#### DIPHTHERIA ANTITOXIN IN GREAT BRITAIN.

The *Medical News* for August 1, 1896, states that the *Lancet*, appreciating that the serum treatment of diphtheria in the British Isles had not attained the results reported from the Continent, caused a long and careful investigation to be made which abundantly substantiated the suspicion that the reason for this difference in results was due to the difference in the antitoxin, few, if any, of the English preparations being reliable in strength, in which particular wide variations were discovered. The conclusions from the report are as follows: (1) that a common standard of estimating the strength of antitoxin serum should be agreed upon by the English manufacturers; (2) that no serum should ever be sent out containing less than sixty normal antitoxin units per cubic centimetre; (3) that antitoxin serum of higher strength must also be provided to meet the requirements of treatment in more severe cases of diphtheria; (4) that every sample of antitoxin serum sold should be plainly marked with the antitoxin strength of the serum (number of normal antitoxin units per cubic centimetre), the quantity of the serum present in the bottle, and the date of issue.

In this connection some statements taken from the *Bulletin of the State Board of Health of Massachusetts*, for April 6, 1896, are of interest. The Board had examined such samples of antitoxin as were offered for sale in the State with the following results:

Serum No. 2, Behring. Test showed that the serum was up to the standard.

Serum of Parke Davis & Co. Test showed that the serum was up to the standard.

Serum No. 2, Mulford & Co. Test showed the serum to be up to the guaranteed strength.

Serum of the Pasteur Institute of Paris, France (Roux). One test showed it to be weaker than represented, and another showed 500 antitoxin units instead of 600 units.

Gibier's Diphtheria Antitoxin, New York. One test showed it to be below the strength represented; another showed from 625 to 750 antitoxin units instead of 2,500, as advertised.

#### LEUCOCYTOSIS AND IMMUNITY, WITH A CRITICAL ANALYSIS OF THE THEORY OF NUCLEIN-THERAPY.

Dr. Walter A. Wells, of Washington, in the *Medical News* for October 17, 1896, discusses at length the theory of nuclein-therapy, and summarizes his careful and interesting article as follows:

(1) Notwithstanding the long-continued conflict as to the importance of the cell and of the lymph respectively, as the protecting agency of the body, it is probable the claims on each side will be found reconcilable.

(2) There is no reason for regarding the leucocytosis, which appears after the introduction of nuclein into the system, as differently produced than that which follows from a great number of other agents many of which are poisons.

(3) Theories of artificially induced leucocytosis, which assume an essential new production of leucocytes by the blood-making organs, are inconsistent with the fact that the blood-making organs send forth only mononuclear cells, whereas in all these forms of leucocytosis, the polynuclear are only or chiefly increased.

(4) Also, Löwitt's theory of leucolysis and consequent leucocytosis fails to stand the test of experiment or of reason, in the light of known physiological principles.

(5) The most rational explanation of leucocytosis is, including the invariable antecedent, leucopenia, according to the principle of themotaxis. The predominance of polynuclear cells is thereby accounted for in the greater sensitiveness of these forms to themotactic influences.

(6) We must regard, therefore, a leucocytosis as only a local condition; that is to say, only a determination of the white cells into the peripheral circulation, without any real, significant, absolute increase of the whole number of those cells. This view is supported by a number of experiments, which showed that at the stage of leucocytosis as found in the peripheral vessels, there was a coincident decrease in the internal vessels.

(7) The leucocytosis produced by nuclein is of this kind. The uric acid found in increased amount in the urine after administration of nuclein may be formed from the nuclein direct and not from the white blood-corpuscles. There is, moreover, no constant correspondence in the number of leucocytes and the amount of uric acid excreted, for there may be leucocytosis without increase of the uric acid, as there may be often an increase of uric acid without leucocytosis.

(8) There is some reason for believing that, of all leucocytes, those possessed of the eosinophilic granules play the most essential rôle in protecting the organism against infectious diseases. A suggestive correspondence exists between those diseases which are distinguished by an augmentation of eosinophiles and diseases antagonistic to tuberculosis.

VIENNA MEDICAL SOCIETY. — Dr. Adam Liewicz, a prominent member of this society, has been expelled for securing a patent upon his "cancroin," a cancer remedy.



## Reports of Societies.

### THE NEW YORK ACADEMY OF MEDICINE.

#### SECTION ON GENERAL MEDICINE.

STATED Meeting, Tuesday, October 20, 1896.

DR. W. GILMAN THOMPSON read a paper on

#### EXPERIENCE WITH THE TREATMENT OF ENTERIC FEVER BY COLD TUB-BATHS.

He stated that his conclusions were based on the observation of about 250 cases in the New York, Presbyterian and Bellevue Hospitals, and in private practice. It was not until within recent years, that the method of treatment referred to had received much attention in this country. He commonly employed a large copper bath tub on rollers, which made it convenient to convey to the bedside. It was elevated about one foot from the floor, as this was the height which rendered the work of the attendant nurses the least laborious. It was filled by means of a hose, and emptied by a syphon as often as was desirable. In practise this was usually after each six baths. Whenever the temperature of a patient rose above 102.5°, he was placed in the tub, all of the body being immersed except the head, on which iced cloths were laid. He was kept in the bath, which was at a temperature of 70°, for fifteen minutes, and during the entire time his body was vigorously rubbed by two nurses. As a rule, half an ounce of whiskey was administered about half an hour before each bath. Usually the temperature of the patient continued to fall for some time after the bath. If at the end of three hours the temperature had again risen to 102.5°, the bath was repeated.

Dr. Thompson laid great stress upon the frictions practised during the bath. The treatment, he said, was one as much by rubbing as by tubbing. The frictions were made by the two attendants and with both hands; the principal object of the rubbing being to excite reflex action. It also served the useful object of diminishing shivering, which was one of the most disagreeable incidents of the bath. Furthermore, it attracted the patient's attention and helped to pass the time away. He well remembered, when a hospital interne in 1881 (about the time when the treatment by cold baths was first practised in New York), how much the patients suffered from the bathing. At this period frictions were not employed, and the results were so unsatisfactory that the method was soon given up here. Some years afterward the present method was adopted by Dr. Peabody in the New York Hospital, and the success he attained with it was so great that when Dr. Thompson himself had an attack of typhoid he insisted on receiving this treatment.

The shivering was also materially reduced by the stimulant mentioned, if it were given long enough before the bath. The temperature of the water for the bath should be accurately taken, and, as a rule, it was found that this was elevated one degree during the bath. Immediately after the bath the patient should be wrapped in a blanket and kept perfectly quiet. Micturition was apt to occur soon after the bath, but not during it.

The cold bath was by no means curative in the same sense as medicinal agents. It acted as a stimulant to the nervous system. The average reduction in tem-

perature was two and one-half degrees, but this might be as great as four degrees. The limitations of this method should always be borne in mind. It did not cut short the disease nor prevent relapses. On the other hand, it did not interfere with any medicinal treatment that might be thought advisable. The good effects of cold bathing were apparent to the most casual observer. Under its use tympanites was a rarity, and it effectually prevented delirium and the various characteristic symptoms described in the books as constituting the "typhoid conditions." At this point Dr. Thompson referred to one successful case in which the patient had no less than 139 baths. At one period in this disease the temperature rose to 108, and remained at this elevation for nearly 24 hours, except when temporarily reduced by baths. He also had two relapses. The most interesting feature of the case was that, notwithstanding the excessive temperature, there was no delirium and an entire absence of the nervous symptoms ordinarily met with.

There were three contra-indications to the cold bath treatment, namely, severe lobar pneumonia, cardiac failure and intestinal hemorrhage. Pregnancy and menstruation, however, presented no contra-indications. While we had not as yet obtained such good results in this country with the Brandt method, as was the case in Europe, the results were still very gratifying. One reason why the European statistics were more favorable than ours was undoubtedly to be found in the fact that there a large proportion of the cases were in soldiers, who were constantly under medical surveillance, and therefore received treatment at a much earlier period than ordinary hospital patients. The latest statistics of the Johns Hopkins Hospital in Baltimore showed a mortality of seven and one-tenth per cent., those of Wilson, of Philadelphia, a mortality of seven and one-fourth per cent., and those of the Presbyterian Hospital, New York, seven and three-fourths per cent.

One of the objections that had been urged against the method was that it was cruel, even to harshness. But this was not founded on fact. Under this treatment the patients showed less languor and improved appetite, and most of them objected but little after they had had a few baths. If a patient was very nervous about the matter the initial bath could be given at 85, or even 90 degrees. After he had been asked to prepare this paper he had expressly questioned ten patients on the subject. All but one declared quite positively that they did not mind the bathing any more than sponging, and some preferred it to the latter. One objected equally to both. To prevent shivering after the bath aromatic spirits of ammonia or champagne were often useful, and in some cases a small hypodermic injection of morphia, given beforehand, diminished shivering during the bath.

Other objections that had been raised were, that it increased the tendency to hemorrhage by driving the blood from the surface, that relapses occurred more frequently than under other methods, and there was an increased liability to the complication of neuritis. Having shown that these objections were also unfounded, he spoke of a final objection, the increased labor and expense involved. There could be no question that this was the case, he said, but if the method resulted in a marked improvement of the patient's condition and in a considerable saving of life, the extra labor and expense might be considered justifiable.

In every case of typhoid fever, however mild, in private practice two trained nurses were really a necessity, and by employing ordinary helpers, who could be readily instructed, to assist them in giving the baths, the expense might be materially lessened. In his own case he had calculated that each bath that he had during his attack of typhoid cost about \$2.50.

His conclusions may be summarized as follows:

- (1) Cold bathing does not shorten the course of the disease.
- (2) It does not prevent the occurrence of relapses.
- (3) It does not prevent the occurrence of the ordinary complications of typhoid fever, although it does lessen their severity.
- (4) It does not interfere with the use of antiseptics and other remedies.
- (5) It can be used in all cases except where intestinal hemorrhage or lobar pneumonia is present.
- (6) It is a rational treatment, as the temperature is reduced and the frictions act as a nervous stimulant.
- (7) It reduces the mortality, and at the same time mitigates all the symptoms.

DR. MORRIS MANGES read a paper on

#### THE TREATMENT OF ENTERIC FEVER BY OTHER METHODS.

He confined himself to two points, namely: (1) The so-called specific or antitoxic treatment, and (2) antiseptic treatment. He remarked at the outset, however, that we were not in a position to pass positively on any method of treatment until the disputed points in regard to the bacteriology and bio-chemistry of typhoid fever had been cleared up. As regards the antitoxic treatment four methods had been tried, which were as follows:

- (1) The injection of sterilized typhoid bacilli.
- (2) The injection of other bacilli.
- (3) The injection of serum from immunized animals.
- (4) The injection of serum from convalescent typhoid patients.

The method of Fraenkel, who made use of deep injections of thymus bouillon in which the typhoid bacillus had been grown and then killed, had been employed by Lambert, of New York, in 24 cases, and Henshaw, of Cambridge, Mass., in 13 cases. In Lambert's cases, 15 were more or less improved, in eight no results were noted, and one died. In Henshaw's<sup>1</sup> the results were satisfactory in eight, in four no decided changes were produced, and one died of hemorrhage. The number of cases of this kind treated was as yet too small to derive any conclusions from, and the future alone could decide as to its merits.

In the antiseptic method, so-called, which had in reality been practised long ago by Murchison, Jenner, Ziemssen, Liebermeister, Shattuck and others, the object was, not to kill the micro-organisms, but to reduce their activity and minimize their effects. The strongest argument against this method was the failure of antiseptics in cholera, where the microbes remain confined to the intestines. It was a fact, however, that it remained in vogue, notwithstanding the increased employment of cold baths. In reality, both parties were doubtless in the right to a certain extent, from the symptomatic point of view. In all cases of typhoid the care of the mouth and of the lower bowel was very important. In his opinion the daily administration of enemata of water ought never to be omitted.

<sup>1</sup> See Journal, May 14, 1896, p. 477.

Of the many internal remedies that had been used, calomel was one of the most important, and it was the custom of a large number of practitioners to give it in the early stages as a routine measure. Some claimed that its efficacy was due to the fact that after it entered the system it was split up, and bichloride of mercury formed. As to the bichloride, he had used it personally only in enteric pills, and he had obtained good results. Of the mineral acids, which had been so long and so largely employed, he believed that hydrochloric acid was the most efficient, and that it should be given as a routine measure in most cases. In closing, he referred briefly to salol and chlorine.

DR. FRANCIS DELAFIELD said there was no question at all in his mind that tubbing was altogether the best treatment, and by this he wished it to be understood that he meant tubbing for the disease itself, not simply for the temperature. He was firmly of the opinion that the baths should be commenced early, whether the temperature was high or not. At the same time there were a large number of cases met with in practice in which it was impossible to tub. He thought that the present was a good time to consider other methods of treatment. During the last five years the mortality from typhoid in all cases, had been quite low. In October, 1883, he had collected the statistics from eight larger hospitals in New York, and these showed that from October 1, 1877, to October 1, 1883, the death-rate was from 20 to 30 per cent. At the present time it was much less than this.

While, therefore, tubbing was acknowledged to be the best, it was necessary to do something for those patients whom we could not tub. He had recently treated thirty cases by a modification of the Woodbridge treatment, which consisted of the administration of one-nine-hundred-and-sixtieth of a grain of podophyllin and one-sixteenth of a grain of calomel, combined with menthol and eucalyptol, alternating with three grains carbonate of guaiacol and one grain thymol. This seemed to him somewhat complicated, and at first he gave one-twentieth of a grain of calomel every fifteen minutes, and then alternated this with five grains of guaiacol, instead of three. After trying this method for a time he became dissatisfied with the number of sore mouths which he had met with, and he therefore substituted sulphate of magnesium for the calomel. He did not see any particular difference in the results. Out of the thirty patients four died. After giving some particulars of these cases, he said that, while the number was too small to base any definite conclusions upon, the impression left upon his mind was, that in mild cases these drugs may shorten the attack, but that in severe cases they had no effect.

DR. A. B. BALL said that he agreed with Dr. Thompson that the key-note of the Brandt treatment was that the matter of rubbing was as important as the tubbing. The mistake made ten or twelve years ago was that this was not recognized, and in Bellevue and other hospitals such poor results were met with that the cold bath treatment was soon abandoned. For its revival we were mainly indebted to Dr. Simon Baruch, who had taught us how to combine the rubbing with the tubbing. He had yet to see the first person who had used this plan in a considerable number of cases who was not entirely satisfied that it was superior to all others. One of the principal dangers in typhoid arose from hypostatic congestion of the lungs, and this was entirely obviated by the method in question. The

gasping respiration of the patient when placed in the bath, like that of a new-born infant, was a matter which had not perhaps been sufficiently alluded to. In regard to the process of menstruation, the cold baths did not have any effect upon this, for the reason that the whole body was immersed in the water.

DR. W. P. NORTHRUP said he was sorry that Dr. Delafield had not given expression to a remark which he had once made to him personally, namely, "The beauty of tubbing in private practise is that the cases run such a *comfortable* course." Dr. Northrup then referred to some cases which had been treated in his wards at the Presbyterian Hospital by the so-called antitoxic method. The first two cases, which were very mild, did very well, but this was not true of the next four, which were more severe. He found them all one night with a temperature of 105°, with respiration from 35 to 40, and a pulse of over 150, while all suffered from dry tongue and muttering delirium. Each patient presented a picture of misery. The next morning they were all tubbed, and under this treatment, he was happy to say, they all recovered.

DR. A. PALMER DUDLEY was the only speaker who objected to the cold baths' treatment. He said that the cold water does not eliminate the poison. It does reduce the temperature, but it is the poison, and not the temperature that kills the patient; and, therefore, an elimination treatment is called for. He also thought the method cruel and especially liable to produce heart failure.

DR. SIMON BARUCH said that the Brandt method was specifically a prophylactic one. It aimed to endow the patient with power to resist the inroads of the disease. In order to render the method as successful as possible it was necessary to closely follow the *technique*. The treatment ought to be commenced before the fifth day, in order to get the best results; but, of course, it was impossible to do this in hospital patients. In private practice, however, he had adopted the plan, and had often employed it before the diagnosis was established. In any case where there was a morning temperature of 102° and an evening temperature of 103°, he would advise that cold baths be at once commenced. His observations had led him to conclude that if in any instance the temperature was reduced more than two degrees by a bath of 65 degrees, the case was not of typhoid. The cold bath was useful, therefore, in the matter of diagnosis. Ordinarily, it was his practice to begin with a bath of 90 degrees. Each successive bath was at a temperature of five degrees less until 65 was reached; at which point he continued the baths, unless cyanosis should be present.

So far from the cold bath's producing cardiac failure, it in reality strengthened, instead of weakening the heart. He believed also that the Brandt method does eliminate the poison more effectively than any other. One proof of this was found in the fact that under its use the diuresis was enormous. As a substitute for the Brandt method in cases in which this could not be carried out, he recommended that the patient should be wrapped in a linen sheet or tablecloth, and have cold water dashed upon different parts of the body (frictions being also made) every two hours. This, like the cold baths, acted as a powerful stimulus to the nerve centres. In conclusion, he stated that, as a routine practice, he commenced the treatment of all his typhoid cases with the administration of twenty grains of calomel.

## MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

TWENTY-SECOND ANNUAL MEETING, ST. PAUL, MINN.,  
SEPTEMBER 15-18, 1896.

THE Association convened in the Senate Chamber at the Capitol. DR. C. A. WHEATON, Chairman of the Committee of Arrangements, called the meeting to order. Most Rev. John Ireland, D.D., offered prayer.

On behalf of the State of Minnesota Governor D. M. CLOUGH gave an Address of Welcome.

MAYOR F. B. DORAN also welcomed the physicians on behalf of the city. He referred to the city's reputation as a host, won by the magnificent record of the recent encampment, and that upon that occasion St. Paul had welcomed the men who had preserved the nation, and now were happy to welcome the men who preserved the bodies of the nation's defenders.

DR. A. J. STONE spoke for the profession in St. Paul, in extending a welcome to the visitors. "We owe much of our delight in anticipating your visit here to the ladies, and we want you all to place your wives, mothers and daughters in the hands of ours at the Kittson residence, so that aside from the scientific labors of the occasion there will be social pleasures for the ladies and gentlemen from abroad."

DR. HENRY O. WALKER, of Detroit, President of the Association, delivered

### THE PRESIDENT'S ADDRESS.

Our path, he said, thus far has been strewn with roses, and I hope it will so continue to the end. I have found it difficult to secure a subject which has not been thoroughly threshed over and over again. I have therefore departed from the usual course, and will offer some suggestions in a purely scientific vein by reporting three cases, in which four operations were done, representing nearly all the operative procedures now done upon the kidney.

CASE I. Sacculated kidney, with suppuration and nephro-lithiasis, and nephro-lithotomy and subsequent nephrectomy.

August 4, 1896, J. R., age twenty-nine, was referred to me for operation, with a history of severe pain in the left kidney twenty years previously. These attacks recurred at intervals of one to three months. This continued with increasing severity until three months before I saw him, when it became constant. There was sediment in the urine for nearly fifteen years. Examination of urine showed pus in quantity, blood at times, but no casts. He presented a marked emaciation, rapid pulse, and a temperature of 99°. Percussion revealed well-marked dullness on the left side. I had, however, suspicion of trouble in the right kidney, therefore the character of the operation to be done must be in conformity with that suspicion. The wound has nearly healed, appetite good, and he walks about the hospital. There is yet some pus in the urine. I here present you with the kidney, together with the calculi removed.

CASE II. Tubercular kidney and nuclein treatment.

The diagnosis was disease of the right kidney. Microscopical examination failed to reveal bacilli, but showed large quantities of pus and epithelium. A nephrectomy was done August 16, 1896. It is not always possible to determine the true character of secretions and excretions from important organs, even by careful microscopical examinations. Clinical impressions are most important. The nuclein treatment

was instituted with marked improvement until she left the hospital, September 9th.

**CASE III. Movable kidney. Fixation by a modification.**

Chronic constipation, flatulence, indigestion, supra-orbital neuralgia, and pain in the right hypochondriac and lumbar regions. A freely movable tumor in the right hypochondriac region. My experience in fixation of movable kidney has been most satisfactory. The kidney was placed in its proper position and the capsule divided for a distance of three inches on its convexity, using care not to wound the cortical substance. The capsule was then separated from the kidney for one inch entirely around the cut and by interrupted catgut sutures. The cut edges were fastened to the fascia and muscle, so that when the suturing was complete there was a solidity of fixation of the kidney. I do not use the deep suture through the substance of the kidney. The simplicity of the method commends itself both as to safety and a greater probability of permanent good results. The most practical route to the kidney is anteriorly. The selection of the lumbar route is largely by precedent. A nephrectomy for tubercular kidney is not always practicable. Fixation of the movable kidney is best done by stitching its reflected capsule to the muscles.

The reports of the Secretary and Treasurer were read and accepted.

The report of the Committee appointed on Preservation of the Transactions was received from Dr. Coulter, and the matter referred to the Executive Committee.

#### A NEW OPERATION FOR CLEFT PALATE,

was described by DR. TRUMAN W. BROPHY, Chicago.

He took the ground that the operation should be performed much earlier than has been the custom of surgeons heretofore. It has usually not been thought advisable to operate for the closure of cleft palate until the child has reached the age of two to five years. He maintained that when the operation was thus postponed the changes in the voice had become permanent, and that a repair of the cleft at that time would not react favorably in the voice production. His operation consists in freshening the edges of the cleft, then by deep suture of silver wire fixed through a lead plate, conforming to the palate, the edges of the cleft are drawn together and so maintained until healing takes place. The technique of the operation was minutely explained. It was original with the author, and in his experience proved most effectual.

DR. W. F. DALEY, of Pittsburgh, in discussing the paper complimented the author in presenting a method so markedly original and in advance of modern surgery. Dr. Daley said that this method does away with all the objections to the old operations. We all know that in some cases we are compelled to operate four or five times, and then consider ourselves fortunate if we succeed in getting a perfect result. Even in these cases the result was never perfect, inasmuch as we could not at that late date teach our patients a perfect speech.

**THE PSYCHO-NEURAL FACTOR IN CLINICAL MEDICINE,**  
by DR. C. H. HUGHES, St. Louis, Mo.

The physician must consider the whole mechanism of the system when treating any one part. Some parts of the body influence the whole less or more

than others. The surgeon must consider the susceptibility, predisposition, powers of resistance, recuperative powers and natural courage of the patient in determining as to the prognosis or operation. In any case the nervous system is either for or against him. Painful ovaries, neuralgic, congestive or inflamed, are not necessarily to be cut out; but to be cured by neurological treatment. The surgeon is beginning to recognize only those symptoms which come under his own legitimate sphere. He must have a wide neurological and psychiatric knowledge if he would avoid fatal mistakes. Much can be done for improving the case often by tranquilizing neurological treatment. In fatal surgical results the reputation of the operating surgeon often suffers because of overlooked neurological conditions which are at fault. Hope is itself a buoyant medicine; and faith in the physician or surgeon is a therapeutic power that should never be shattered by us.

DR. BUCKNER, Cincinnati: This paper is evidently the result of experience. A good surgeon must be hopeful, calm, and at all times careful to avoid anything disturbing to the patient already fearful of the prospects of an operation. I am very certain it requires but little observation for the good physician and surgeon to realize how important it is to be careful of every expression, act, and word in the sick room.

DR. PARKER, Cleveland: I agree with the writer, as a surgeon who is doing some such work. But even with the aid of the neurologist we are unable at times to make a diagnosis; and indeed, there are many things in neurology that are not yet settled.

DR. HUGHES, in closing: I had no intention to cast reflections on the good surgeons. We all know there has been vast improvement in the technique of the operating-room. We know that the patient has been more of a consideration in the last few years, and the surroundings have been correspondingly changed. The American surgeons to-day are achieving results which are utterly impossible without the psycho-neural factor and assistance.

DR. HUGH T. PATRICK, Chicago, read a paper on

#### TRUNK ANESTHESIA IN LOCOMOTOR ATAXIA.

He said, in substance, that in nearly all cases of tabes dorsalis there is a band of anesthesia about the trunk at the level of the nipple. It is, early in the disease, very narrow or even incomplete, or may be represented by a zone in which the localization of touches is not normally accurate. The sensory blunting on the leg, so frequent in tabes, is generally an analgesia. The trunk anesthesia is essentially tactile, and the pain sense may be quite normal. The band of anesthesia does not correspond to the cutaneous distribution of the intercostal nerves, but to the nerve fibres arising from adjoining segments of the spinal cord. In some cases there are two distinct zones of anesthesia, indicating simultaneous involvement of spinal segments at some distance from each other. The borders are inconstant, ordinarily retract on continued testing, and vary in position with the method of examination. The same band of anesthesia may occur in syphilitic pseudo-tabes, as shown by an illustrative case, as far as known the only one on record. The patient presented nearly all the symptoms of locomotor ataxia, including a wide band of trunk anesthesia, but a diag-

nosis of syphilitic disease of the cord was made and an active specific treatment carried out: he made an almost perfect recovery.

DR. GUSTAVUS BLECH, Detroit, read a paper on the

#### TREATMENT OF SOME INFLAMMATORY DISEASES OF THE GASTRO-INTESTINAL TRACT.

He said that the treatment of catarrh of the stomach and other similar inflammatory conditions of the same, as it is practised to-day by most medical men, meets with failure because the treatment is directed against the symptoms and not against the cause of the disease. All the usual remedies may improve one or the other symptoms for a limited time; but the etiological morbid conditions still remaining, the symptoms necessarily will appear *again*. The treatment is directed against the inflammation itself. He prescribes hydrozone, well diluted in water, at least a quarter of an hour before each meal. The oxygen, which then develops, kills the germs and cleanses the membrane of the wall of the stomach without injuring the animal cells. It is an efficient and powerful, yet still bland and innocent remedy. The doctor then explained the cure of a case of gastric ulcer with the above treatment. He has seen the most stubborn cases recover, and hence he believes the treatment will heal ulcers of the stomach.

DR. DALEY, Pittsburgh, deprecated the very general use of glycozone, hydrozone and such remedies unless a very careful and discriminating diagnosis had been made. Most of these cases are due largely to the formation of toxins.

DR. PATRICK, of Chicago, was very sorry that he could not agree with the author; but he could not until it was explained which variety of inflammatory condition in the stomach was referred to. Gastritis is too comprehensive a term. When a cure is proposed we must know what form of gastritis we have to deal with.

DR. I. A. ABT, Chicago, said: The diseases of the stomach cannot be grouped together as gastritis. Many of these conditions are due to toxins found in the gastro-intestinal tract. We cannot always make a positive diagnosis at once, but by experiment only can we arrive at definite conclusions. Any one remedy cannot and will not answer for all cases.

DR. PAUL PAQUIN, St. Louis, read a paper on

#### THE TREATMENT OF EXPERIMENTAL TUBERCULOSIS IN ANIMALS BY THE USE OF BLOOD SERUM.

The use of antitoxin goes back to the active principle underlying immunization, an agent which is itself curative to a certain degree. Tuberculin is, to a degree, capable of modifying certain forms of tuberculosis. The inconvenience resulting is chiefly in the more or less severe reaction following. It is now claimed that tuberculin may be made with this poisonous principle eliminated.

From my own, and the experience of others, it will be observed that only a relative number of tuberculous patients can, with our present knowledge of tuberculosis and anti-tubercle serum, be treated successfully. If it does not succeed it is because of existing conditions, such as intolerance to serum injections of any kind (which is very rare), general destruction of physiologic equilibrium beyond repair, incurable lesions or mixed infection.

DR. LONGSTREET TAYLOR, St. Paul: My experience with the Paquin serum has not been entirely satisfactory, but I intend to give it further tests.

DR. W. F. BARCLAY: I am satisfied that some such men as Paquin will demonstrate the ultimate success and positive value of antitubercle serum, and I hope criticism will not discourage him and others.

DR. H. W. LOEB, St. Louis: At the last meeting I presented some reports relative to the treatment of laryngeal tuberculosis with serum. I promised at that time to report the results. While they have not been as good as we had hoped, yet they are such as to encourage still further attempts. Knowing that these cases at best are almost always fatal we, as well as the patient, are glad to try anything that gives the least hope of a cure. Of the cases reported at least two are yet living and well. Of two others I cannot say, but at latest reports there was no return. I believe the serum treatment will eventually be the method, but we must go farther before we can say it is a specific.

DR. E. M. HOUGHTON, Detroit, read a paper on

#### A DEMONSTRATION OF THE THERAPEUTIC ACTION OF THE ANTITOXINS.

The author reviewed the theories of serum-therapy, demonstrating the differences between toxins and antitoxins.

DR. JOSEPH MUIR, New York, read a paper on

#### REINFECTION IN CONSUMPTION.

DR. J. B. MURPHY, Chicago, read a paper on

#### INDICATIONS FOR, AND DEMONSTRATIONS, OF REMOVAL OF THE GASSERIAN GANGLION.

He demonstrated the technique of the operation on a cadaver head. The operation may seem heroic, but heroic measures are necessary in a condition so severe as trigeminal or facial neuralgia. These patients will submit to anything in the hope of relief. Indeed, they have said to me before the operation, "Doctor, either kill or cure me." This method of operating is more simple, and results in less deformity as well as being more certain in its results, than any other yet suggested. I have always suggested some conditional treatment, especially that of castor oil, before resorting to so heroic and serious a measure as this operation. The trouble, however, with all such treatments is that they do not give a permanent relief. The castor-oil treatment has given temporary relief in several cases.

DR. A. J. OCHSNER, Chicago: The author has given us a most beautiful demonstration of a difficult operation, and one which in his hands no doubt will give a large measure of success. I hesitate to operate in these cases of facial neuralgia for the very fact that they are necessarily of a serious nature. I have recently had some experience in these cases in the use of castor oil. I have given this remedy in half-ounce doses twice daily for ten days or two weeks at a time, and to my surprise it has thus far proved a most successful remedy. As to whether the results will be permanent, I cannot say; but no case has as yet returned to its former severity. I should repeat the castor oil whenever there are indications of the returning attack.

(To be continued.)

## Recent Literature.

*A Treatise on Appendicitis.* By JOHN B. DEEVER, M.D., Surgeon to the German Hospital, Philadelphia. Pp. 168, 32 full-page colored plates, and other illustrations. Philadelphia: P. Blakiston, Son & Co. 1896.

The author of this volume aims to publish a systematic study of appendicitis. He treats not only of the usual type of the disease, but also of the various anomalous conditions so frequently seen in actual practice. The data from which the work is compiled he declares to have been obtained from actual experience in over five hundred cases. Especial attention has been paid to etiology, symptomatology and operative technique. It is a concisely written, interesting book. The facts are generally well presented and arranged. The plates are graphic, especially those illustrating the various steps of an appendix operation. The work at times resembles a *résumé* of the subject rather than a systematic original investigation.

The chapter on pathology is largely devoted to the usual type of appendicitis and its possible complications. Other forms of inflammation and neoplasms are merely alluded to. The chapter on clinical history and diagnosis, although based on an analysis of five hundred cases, furnishes nothing especially new. In the chapter on differential diagnoses a full list of diseases is found.

An operation is the only proper treatment for appendicitis, according to Dr. Deever, in a large majority of cases. He describes at length the operative technique of the usual operation through a vertical incision at the border of the rectus muscle and the McBurney "criss-cross" method. Each step is illustrated by colored plates.

The volume concludes with the chapters entitled "Complications," "Sequæ," and "After-Treatment." The latter is a summary of details.

The book is one that attracts attention when first seen by its fine paper, clear type and brilliant illustrations. The preface leads one to expect from the careful analysis of such a mass of clinical data as five hundred cases of appendicitis would furnish, some new and valuable information. In this respect the reader is somewhat disappointed, since inspection shows only a compilation of a large part of our present knowledge of this dangerous lesion.

*Affections Chirurgicales du Tronc (Rachis, Thorax, Abdomen, Bassin).* Statistique et Observations. Par le DR. POLLAILON, Chirurgien de l'Hôtel Dieu, etc. Pp. 550. Paris: Librairie, Octave Doin, éditeur. 1896.

This is the second volume of the interesting work now in process of publication by Professor Pollailon. Like the first volume this one is a publication of a very extended clinical experience. As the title indicates, affections of the spine, thorax, abdomen and pelvis are discussed. They are classified as traumatic and organic, that is, pathological. The first includes contusions, wounds, fractures, dislocations, etc. The second comprises abscess (acute and chronic) phlegmon, tubercular osteitis, peritonitis, appendicitis, tumors, deformities and malformations (both congenital and acquired).

What has been said of the first volume<sup>1</sup> applies

<sup>1</sup> Boston Medical and Surgical Journal, vol. cxxiv, p. 372.

equally to the second. The plan and aim of the author have been well carried out. It is not to report surgical cases, making them the foundation for a treatise on Surgical Pathology, but to collect all his material, compile his records, and, after classifying and studying them, to extract the important clinical facts in order to determine the result of his treatment, both operative and non-operative. He endeavors to show what cases he has cured, what ones he has relieved, in what ones he has been unsuccessful, how he has done it, and how long it has taken to obtain the result. All his fatal cases are included.

Personal statistics thus compiled and arranged by a skilful surgeon, from an experience of seventeen years in noted French hospitals, cannot fail to furnish valuable facts; and this is true of Dr. Pollailon's report. In the concluding volume of the work will be considered rectal diseases, genito-urinary diseases, and affections of the head and neck.

*Uric Acid as a Factor in the Causation of Disease.*

A contribution to the Pathology of High Arterial Tension, Headache, Epilepsy, Mental Depression, Paroxysmal, Hemoglobinuria and Anemia, Bright's Disease, Diabetes, Gout, Rheumatism, and other Disorders. By ALEXANDER HAIG, M.A., M.D., Oxon. Hon., F.R.C.P., etc. Third edition, with fifty-four illustrations. Philadelphia: P. Blakiston, Son & Co. 1896.

This is a third edition of Dr. Haig's well-known book on "Uric Acid as a Factor in the Causation of Disease." The first edition, which was practically a *résumé* of some twenty-five previous papers scattered in various journals and volumes of transactions between 1884 and 1892, appeared in the latter year; the second edition in 1894. With each edition, the volume has grown in size with the introduction of new facts in support of the author's arguments. In the present edition experiments on temperature, menstruation and fatigue are published for the first time.

Dr. Haig's conviction of the important rôle played by an excess of uric acid in the body and in the blood as a cause of many functional and organic diseases becomes more deeply rooted with increased attention to the subject, and at the same time the variety of conditions thus influenced increases in number in his opinion.

*Hemorrhoids and other Non-Malignant Rectal Diseases.*

Diagnosis and Treatment. By W. P. AGNEW, M.D. Third edition, 214 pages and 76 illustrations. San Francisco: Pacific Press Publishing Co. 1896.

This edition is considerably enlarged from the second edition published in 1891. The subjects treated are hemorrhoids, fistulæ (both rectal and anal), ulcers, strictures, prolapse, polypi, neuralgias, proctitis and impacted feces.

Dr. Agnew writes in the same attractive style as formerly. He is apparently as enthusiastic as ever over the treatment of hemorrhoids by injection with his modified carbolic solution, and even if his experience does not correspond with that of other practitioners, still he presents very well his side of the subject.

The book is well arranged and indexed. Certain subjects are fully treated, while others are too general in character, and too much abridged to be of much practical value.

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ON THE VALUE OF A KNOWLEDGE OF NEUROLOGY.

THE majority of medical students seem to regard the subject of neurology as something metaphysical and mysterious, a field apart from that of the rest of the science of medicine, and one which is only cultivated by persons of a peculiar squint-brained mould who devote themselves to it more to beguile the tedium of an elegant leisure than with any serious idea of benefiting humanity. They scoff, moreover, at the limited scope of its therapeutics, and attempt to stifle its *raison d'être* with the sneering remark that "All you can do is to give iodide—and a bad prognosis"; and they even go so far as to glory in their profound ignorance of nervous disease, and studiously avoid the clinics.

It should be impressed upon such men that in so thinking and doing they are thereby really throwing away the most splendid opportunity which is offered to them throughout their whole medical course, of training the two faculties most essential to the successful physician—the faculties of observation and of logical induction.

The trouble with most students who are placed before a clinical case is that in getting at historical data, they fail to eliminate the irrelevant, and mass the essential; and, secondly, that they are too prone to jump at conclusions concerning a single organ without giving due consideration to the organism as a whole.

To eradicate such defects falls peculiarly within the power of the neurological instructor; for the very nature of nervous cases, with their unlimited multiplicity of symptoms, is such as to educate his perceptive and reasoning faculties to the highest degree, and thus enable him to impart a clearer insight into the working of the human machine, energized and regulated as it is by the great cerebro-spinal apparatus, than is possible to the worker in any other field of the science.

His distinctly neurological habit of careful and ex-

haustive examination, with its attendant systematic array of findings and logical inferences therefrom, cannot but have a profound influence in shaping the course of the future physician's work in a way which will at once distinguish it from the ordinary and sloven.

Moreover, it cannot be argued that such a training will make a man see everything from a neurological point of view; it is too broad and thorough. On the contrary, it will enable the future surgeon to be something more than a mere mechanical factor in operative cerebro-spinal diseases, a position which certain surgeons most conspicuously occupy at present. It will impart to the man of gynecological proclivities a more just appreciation of nervous phenomena which are only too frequently incorrectly attributed to uterine diseases, and enlarge his field of vision beyond a single organ and its adnexa; and, finally, it will rid the man who is to follow the path of general practice of that most senseless notion that the nervous system is a thing apart, and teach him to note the marks of its influence either as a valuable ally or as a treacherous antagonist in every case he meets.

One of the most important reasons for the narrow scope of nervous therapy as regards organic diseases is that many such cases are, when in their curable stages, in the hands of the family physician, and the vague but unequivocal signs which they give are through his indifference—or ignorance—overlooked. This is especially true of that large class of nervous diseases which is the result of the virus of syphilis.

As regards the cases which are really chronic from the start, a practical knowledge of neurology will enable the physician to alleviate suffering even if he cannot cure and, what is of chiefest importance, prevent him from exaggerating the disease by indulging in a wholesale and irrational exhibition of strychnia, bromides and iodides.

There is absolutely no reason why the sufferer from incurable nervous disease should not obtain at the hands of his medical attendant the same solicitude and studied attention to the alleviation of symptoms as does the victim of chronic heart, lung or kidney trouble, but that he generally fails to get either is a fact which obtains and will continue to do so until a broader and more rational knowledge of neurology is, by compulsion, if necessary,—incorporated into the general mass of medical information which is required of the men who leave our medical schools.

SHELL-FISH IN RELATION TO DISEASE.<sup>1</sup>

THE Local Government Board of England has just issued an extremely interesting document entitled "Oyster Culture in Relation to Disease," in which the following papers are presented: Report of Dr. Bulstrode on an inquiry into the conditions under which oysters and certain other edible mollusks are culti-

<sup>1</sup> Twenty-fourth Annual Report of Local Government Board, 1894-1896. Supplement in continuation of the Report of the Medical Officer for 1894-1895. On Oyster Culture in Relation to Disease. Pp. xxvi, 174. London, 1896.



vated and stored along the coast of England and Wales, Dr. Klein's report on bacteriological researches on the same subject, a copy of Dr. Conn's report to the State Board of Health of Connecticut on the outbreak of typhoid fever at Wesleyan University, and extracts from the Proceedings of the Académie de Médecine of Paris relating to the same subject.

The investigations conducted by Dr. Bulstrode included all parts of the coast line of England and Wales where the oyster industry is carried on as a trade. His report is fully illustrated with maps, plans and photographs of the places which were inspected. In his introductory comments upon these papers the chief medical officer says: "A superficial glance at the maps with which Dr. Bulstrode's report is illustrated, might well lead to the hasty conclusion that sewage is deemed to be of value, if indeed it is not actually sought for, in connection with the processes of oyster fattening and storage"; and still further that, "at certain places along the coast no care whatever has been exercised in the selection of localities for fattening beds and for storage ponds, in order to ensure that oysters be reasonably free from sewage pollution."

The information presented by Dr. Bulstrode leaves no room for doubt upon this point. His tour of investigation began at the river Thames, whence he visited the estuaries of all the rivers along the east coast of England northward, and then along the west coast northward, and along the British Channel, to point of beginning, including, in all, fifty-three different places.

Among the oyster-beds mentioned as peculiarly liable to sewage contamination are those of Grimsby and of the river Medina on the Isle of Wight, the former receiving sewage from 60,000 inhabitants, and the latter from 10,000. (But what shall be said of the Providence River oysters, largely used in New England, which are daily covered with sewage-polluted water coming from 250,000 people, the population of Providence, Pawtucket, Worcester and other towns?)

This inquiry appears to have been made, largely, in consequence of the experience of the limited cholera epidemic which prevailed in England in 1893, and which was believed to be due in a measure to the contamination of oysters at Grimsby and Cleethorpes by the sewage of those places.

The conclusions which appear to be derived from Dr. Klein's bacteriological investigations are the following:

(1) The cholera vibrio, and still more the typhoid bacillus, are difficult of demonstration in sewage known to have received them.

(2) Both these organisms may persist in sea-water tanks for two or more weeks, the typhoid bacillus retaining its characteristics unimpaired, while the cholera vibrio tends to lose them.

(3) Oysters from sources which appeared to be free from risks of sewage contamination exhibited none of the bacteria, specific or otherwise, which are commonly regarded as being concerned with sewage.

(4) Oysters from a few out of numerous batches derived from sources where they did appear to be exposed to risk of sewage contamination were found to exhibit colon bacilli, a circumstance which, notwithstanding the comparative universality of this intestinal organism, may be regarded as having some significance by reason of the absence of this bacillus from oysters which appeared to have been exposed to no such risk.

(5) In one case where the circumstances were especially suspicious, Eberth's typhoid bacillus was found in the mingled body and liquor of the oyster.

Dr. Thorne makes the following intelligent comment on this report: "The sanitary history of this country has been one in which progress, or want of progress, has been largely dependent on the intelligent apprehension of, or the inability to apprehend, two important factors: First, that in estimating the degrees in hurtfulness of filth, a foremost place must be assigned to that which is derived from the human intestinal canal; and, secondly, that since we can never know that the form of filth in question is free from the specific matter of disease, we should always regard such filth as potentially diseased and infective. Thousand of lives have been saved by applying these principles to our water-supplies; it still remains to apply them, in but too many places, to the preparation of oysters for human consumption."

#### MEDICAL NOTES.

**THE PLAGUE IN INDIA.** — Bubonic plague is spreading in Bombay, and several Europeans have recently been attacked. Two Englishmen died of the disease early in December.

**YELLOW FEVER AT PORT AU PRINCE.** — Yellow Fever is epidemic in Port au Prince, Hayti, and a strict quarantine is maintained against the place by all the other West Indian ports. The Haytian authorities claim that doctors differ as to whether the disease is yellow fever or a pernicious form of malarial fever.

**DR. JAMESON'S ILLNESS.** — According to the English medical press Dr. Jameson's trouble is one of long standing, his chief trouble being due to hemorrhoids, for which he was twice operated upon in South Africa. The confinement of the jail resulted in the aggravation of his original disease by a very painful fissure, which caused almost entire loss of sleep and brought him to a condition of extreme exhaustion. He was operated upon by Mr. Herbert Allingham, and although at first he did not do as well as had been hoped, is now improving.

**PRESIDENT KRUGER'S COURAGE.** — Poultney Bigelow, in the current number of *Harper's Monthly*, gives an interesting account of the amount of pain which the phlegmatic and diplomatic President of the Boer Republic is capable of calmly inflicting upon himself. It seems that President Kruger once lost a portion of his left thumb by the explosion of a gun while out

shooting. Before he saw fit to consult a surgeon, gangrene of a part of the thumb which was left ensued. The surgeon who was finally called in advised amputation at the elbow, but Kruger thought he would not have it done, and was so obstinate as to refuse even to have his hand amputated at the wrist. The surgeon thereupon gave up the case, and his patient began to treat himself by calmly cutting off the gangrenous portion with a knife. As his first effort was unsuccessful in securing cicatrization he amputated his thumb above the second joint, and saved his hand. He is also said to have dug an aching tooth out of his jaw with a penknife. A man capable of such calm displays of fortitude might be justly considered a dangerous adversary either in war or diplomacy.

**BEARING A PROFESSIONAL BROTHER'S LEGAL BURDENS.** — Dr. Cullingworth of St. Thomas' Hospital, London, was recently sued for malpractice by a hospital patient upon whom he had performed double ovariectomy, the patient claiming that she had consented to the removal only of the one ovary which was known to be diseased at the time of the operation. Dr. Cullingworth claimed that she had consented to his doing what he found necessary at the time of the operation, and that he had found the other ovary so diseased that it was unsafe to leave it behind. Although the jury brought in a verdict in his favor, he was put to an expense of £1,000 by the trial. A subscription to aid him in defraying this great expense was started among his professional brethren, and so great was the interest in his vindication that within the first forty-eight hours over £500 were subscribed.

#### BOSTON AND NEW ENGLAND.

**ACUTE INFECTIOUS DISEASES IN BOSTON.** — For the week ending at noon, December 23, 1896, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 94, scarlet fever 41, measles 105.

**MEASLES IN CAMBRIDGE.** — An epidemic of measles is reported as prevailing in Cambridge.

**APPOINTMENTS.** — Mr. Lamont G. Burnham has been appointed a trustee of the Boston City Hospital. Dr. William H. Prescott has been appointed medical inspector of the Department of Public Institutions of Boston.

**BEQUESTS TO HOSPITALS.** — By the will of the late Henry L. Pierce, of Dorchester, \$50,000 is left to the Massachusetts General Hospital and \$50,000 to the Massachusetts Homeopathic Hospital; \$20,000 each are bequeathed to the Children's Hospital of Boston, and to the Massachusetts Charitable Eye and Ear Infirmary, the Boston Lying-in Hospital, the New England Hospital for Women and Children, and the Boston Home for Incurables. Numerous large bequests are made to educational and charitable institutions. The public bequests are to be made after the payment of numerous legacies to relatives and friends, and are to bear proportionately any deficiency which may oc-

cur after the payment of the private bequests. Any of the residue that may remain after paying all the legacies is to be divided equally among the Museum of Fine Arts, the President and Fellows of Harvard College, the Massachusetts General Hospital, the Massachusetts Institute of Technology, the Massachusetts Homeopathic Hospital.

#### NEW YORK.

**THE SOCIETY OF MEDICAL JURISPRUDENCE.** — At the annual election of affairs at the Society of Medical Jurisprudence, held December 14th, Dr. Edward F. Brush was made President, S. B. Livingstone, Vice-President, John C. West, Recording Secretary, Dr. H. Stafford Newton, Corresponding Secretary, and Dr. McLean Shaw, Treasurer. At the same meeting Dr. Theodore K. Tuthill, at present one of the city's coroners, read a paper on "The Duties and Scope of the Coroner's Office," in which he expressed the opinion that coroners should be appointed, instead of elected, on account of the scientific character of the work devolving upon them, and that only especially well qualified physicians should be elected for the position. The medical staff, he thought, should be increased, as it was now totally inadequate.

**MEDICAL EXAMINERS FOR THE PUBLIC SCHOOLS.** — The Board of Education having signified its hearty approval of the Health Department's proposition for the appointment of 150 medical examiners for the public schools, with one chief inspector to superintend their work, the Board of Estimates and Apportionments has appropriated \$47,500 for the payment of the salaries of such a corps of inspectors during the coming year. Already a large number of physicians have applied for the positions, and it is stated that a professor in one of the medical colleges is among the number. President Wilson, of the Board of Health, it is announced, will give preference to those who have served in the Department's corps of summer physicians in making the appointments.

**THE CAPITOL AT ALBANY TO BE VENTILATED.** — It is to be hoped that at its approaching session the State Legislature will be able to accomplish more satisfactory work than has usually been the case. During the recess the Superintendent of Public Buildings has been making changes in the Capitol at Albany which have been urgently demanded for years. The improvements that have been carried out will enable a change of air throughout the entire building to be made every few minutes, and for the first time in its history the Capitol will be perfectly ventilated.

**A LARGE BEQUEST TO A HOSPITAL.** — By the will of Mrs. Mary Loomis, widow of Judge James C. Loomis, about \$150,000 is left to the Bridgeport Hospital, to found what is known as the Loomis Fund for Free Beds.

**A LOW DEATH-RATE.** — The health of the city continues unusually good, the number of deaths reported from week to week being exceptionally small for this season of the year. In the week ending

December 19th the total mortality was 625, a decrease of 22 from that of the preceding week. Diphtheria is now somewhat more prevalent than was the case during the summer and autumn; but the number of deaths from it during the past week, 33, was 3 less than in the week ending December 12th. In that week the deaths from typhoid fever reached 13, the largest number for a long time, but in the week ending December 19th the mortality from this disease was reduced to 3. While the deaths from consumption show an increase from 81 to 97, those from pneumonia show a decrease from 85 to 61.

#### DEATH-RATE IN THE STATE FOR TWELVE MONTHS.

—The records of the New York State Board of Health show that during the twelve months ending November 30th, 122,056 deaths were reported in the State. This is two deaths less per day than in the previous year, and represents an annual death-rate of 18.50 per thousand, as against 19.00 last year. The largest number of deaths reported in any one month, 12,653, was in July, and the smallest, 8,156, in November. The largest number of deaths from any one class of affections, 15,922, was due to the acute respiratory diseases, including influenza; while phthisis pulmonalis caused 13,411 deaths. From accident and violence there were 1,695 deaths, of which 916 were in New York City, and 407 in Brooklyn. In August there were 1,125 deaths from sunstroke, of which 1,040 were in New York City and Brooklyn. It is worthy of note that the mortality from malarial disease shows a material decrease.

### Miscellany.

#### SUBSCRIPTIONS FOR A PASTEUR MONUMENT.

It has been decided to erect in one of the squares of Paris a monument to the memory of M. Pasteur. Statues or busts will also no doubt be located at his birthplace and in other cities. The Paris Committee has, however, wisely determined that the statue obtained through international effort shall be located at Paris, where it will be seen by the greatest number of his countrymen and also by the greatest number of his admirers from other lands. The Paris Committee has for honorary members the President of the Republic and his cabinet, together with about one hundred and sixty of the most prominent officials, scientists and other distinguished citizens of France. Of this Committee J. Bertrand, member of the French Academy, Perpetual Secretary of the Academy of Sciences, is President, and Grancher, member of the Academy of Medicine, Professor in the Faculty of Medicine, is Secretary.

The Paris Committee has extended the opportunity to the people of the United States to assist in this tribute of appreciation and love, and has authorized the organization of the Pasteur Monument Committee of the United States.

The members of this Committee gladly accept the privilege of organizing the subscription, and of receiving and transmitting the funds which are raised. The Committee consists of

DR. D. E. SALMON, *Chairman*, Chief of the Bureau of Animal Industry.  
DR. E. A. DE SCHWIKITZ, *Secretary*, President of and representing the Chemical Society of Washington, Chief Chemist Biochemic Laboratory.  
DR. G. BROWN GOODE, *Treasurer*, Assistant Secretary of the Smithsonian Institution.

DR. GEO. M. STERNBERG, Surgeon-General U. S. Army.  
DR. J. RUFUS TRYON, Surgeon-General U. S. Navy.  
DR. WALTER WYMAN, Surgeon-General U. S. Marine-Hospital Service.  
PROF. S. F. EMMONS, U. S. Geological Survey, representing the Geological Society.  
PROF. LESTER F. WARD, President of and representing the Anthropological Society of Washington.  
DR. WM. B. FRENCH, Representing the Medical Society of the District of Columbia.  
HON. GARDINER G. HUBBARD, President of and representing the National Geographical Society.  
MR. C. L. MARLATT, Assistant Entomologist U. S. Department of Agriculture, representing the Entomological Society.  
DR. CH. WARDELL STILES, Zoologist U. S. Bureau of Animal Industry, representing the Biological Society of Washington.

The Committee believe it is unnecessary to urge any one to subscribe. The contributions of Pasteur to science and to the cause of humanity were so extraordinary, and are so well known and so thoroughly appreciated in America that our people only need the opportunity in order to demonstrate their deep interest.

All can unite in honoring Pasteur. He was such an enthusiastic investigator, so simple, so modest, so lovable, and yet, so earnest, so great, so successful—his ideals were so high and his efforts to ameliorate the condition of humanity so untiring that an enthusiastic response from the whole civilized world is to be anticipated. The United States will vie with the foremost of nations in this tribute. Chemists, zoologists, physicians and all others interested in science will wish to be represented. No one is expected to subscribe an amount so large that it will detract in the least from the pleasure of giving. A large number of small subscriptions freely contributed and showing the popular appreciation of this eminent Frenchman is what are most desired. The amounts thus far subscribed by individuals vary from fifty cents to ten dollars. It is hoped that no one who is interested will hesitate to place his name upon the list because he cannot give the maximum amount.

The JOURNAL has been asked to receive and forward subscriptions, and will be glad to do so.

#### "THE DELIRIUM OF TALK."

THE following annotation from the *British Medical Journal* may be advantageously considered by readers on this side of the Atlantic who, as recent events have demonstrated, are exposed alternately to the specious rhetoric of boy orators and jingo senators:

"We boast ourselves," says the editor, "a practical people, yet there is scarcely a nation upon earth which to such an extent allows itself to be led by oratory. In public, and largely in private life we can do nothing without speeches—except bury each other, for happily the funeral oration is not yet naturalized among us. We are governed by orators; indeed it would sometimes appear that Parliament existed for no other purpose than to serve as a theatre for their performance. Carlyle, who himself perpetrated a vast amount of written oratory, once handed his secretary a cheque in recognition of 'ten years of luminous silence.' The nation would be grateful to the members of the great 'Palaver House' for a single session of such enlightening virtue. As Lord Rosebery said at Edinburgh the other day, they all speak too much and too often. The same thing may be said of county councils, boards, vestries and other such *conciliabula*, of the law courts, and even—we hint it with whispering humbleness—of the churches. We live, in fact, in a whirlwind of words, a delirium of talk; and this unwholesome environment leads to the development of a neurotic condition of the political and social organism which is fraught with the gravest danger to the commonweal."

More than once in recent years the excitement of oratory has led to attacks of hysteria affecting large numbers of the public, and it is conceivable that a state of acute national phrensia might be brought about by the same cause. It is hardly too much to say, therefore, that the mere orator is a danger to society. Dr. Le Bou has told us what the madness of crowds may lead to, and the orator has the power of engendering this madness and stimulating it to the highest pitch of destructive fury. Not only does the orator act upon the crowd, but it reacts upon him. He becomes intoxicated with the exuberance of his own verbosity, and is carried into excesses of speech which, when translated by those whom he has influenced into action, he would in his sinner moments deplore. A curious illustration of the possible dangers of oratory was afforded recently by the lunatic who lectured on his own disease at Vienna. The lecture, we are told, was admirable as a display of oratorical art; the wealth of ideas was only equalled by the brilliancy of expression. The effect of such a discourse on a popular audience may easily be imagined. The speaker might in this country have carried on a campaign against the lunacy laws, the iniquities of 'mad doctors,' and the horrors of madhouses, which would have led to an agitation for the setting free of all lunatics and the abolition of asylums. And if 'a tale told by an idiot, full of sound and fury, signifying nothing,' could do this, what might not a course of inflammatory orations by a master of the art of making the worse appear the better reason, on subjects as to which the people are without authoritative guidance, accomplish? Plato banished poets from his republic, and we are inclined to think that it would be for the good of mankind if a similar course were adopted with orators"; and we may add in the United States, with senators even though not orators.

### Correspondence.

#### THE PRONUNCIATION OF LATIN.

QUINCY, MASS., December 19, 1896.

MR. EDITOR:—Many medical men with a most commendable desire to keep up with the times, attempt to adopt the Roman pronunciation for common Latin terms. The attempt is generally successful to only a moderate degree, so that the result is a mongrel pronunciation neither Roman, nor English, nor Continental. It is generally understood among professional classical teachers that the Roman pronunciation is to be used only in reading the Latin of classical authors. Even when one is translating from the works of Cicero, Cæsar, Virgil, Ovid, Horace, or any other Latin writer, the proper names when transferred to English must be given the English pronunciation. In fact, these proper names have been anglicized. The terms of anatomy, physiology, and other sciences should be given not the Roman but the English pronunciation. By clinging to the English pronunciation, the physician shows, not that he is old-fashioned, but that he is not only scholarly but progressive. So far-reaching is the law which I have stated, that scholars regard the use of the Roman pronunciation, even in connection with entire Latin phrases which have become proverbial, as entirely out of place.

Allen and Greenough, in their well-known grammar, say: "The English method should be retained in Roman names in English, as Julius Cæsar; and in familiar quotations, as *E pluribus unum*; *viva voce*; *vice versa*; *a fortiori*; *Veni, vidi, vici*;" etc.

The English pronunciation, is, to be sure, both illogical

and difficult, while the Roman pronunciation is musical, consistent and easy. A combination of both styles of pronunciation is simply unendurable. Furthermore, sporadic attempts to master an unfamiliar method of pronunciation are almost certain to result in failure. So is it not, then, the part of wisdom for English-speaking nations to agree that proper names, common phrases, and the terms of science be pronounced by the English method? Scholars have already decided in favor of this plan.

Very truly yours,  
FREDERIC ALLISON TUPPER,  
Head Master, Quincy High School.

#### PYORRHEA ALVEOLARIS.—SERIES RADIOGRAPHY.

BOSTON, December 18, 1896.

MR. EDITOR:—This disease is usually considered to be of germ origin, though Miller, who is the authority on oral germs has not succeeded in finding a specific form of bacillus.

I have made a number of radiographs of the alveoli in patients with slight pyorrhea alveolaris, and find the edges do not extend as far as normal. This, together with the fact that absorption of bone is not usually due to germs, causes me to believe the germ theory not entirely adequate.

As the disease may not necessarily begin at the surface of the mouth, and as absorption of the alveoli may be the first symptom, my object in writing this note is to focus sufficient attention on this point to have my observations followed up.

In an article on Oral Cameras published in this JOURNAL, attention was called to a new principle in radiography which consisted in using superimposed films or plates instead of single ones. A more detailed description may be found in the *Electrical Review* for July 1st. Further experience has shown that even with films an intervening layer is unnecessary, as the silver in the emulsion is sufficiently opaque to give a graded series of negatives. In my cameras for the mouth and other cavities where the flexibility of the photographic surface is of importance, this is a distinct gain. Twelve films of celluloid or paper are not too many for good results.

Very truly yours,  
WILLIAM ROLLINS.

#### THE INTRODUCTION OF ETHER.

BERKSHIRE, MASS., December 20, 1896.

MR. EDITOR:—In 1846 I was Admitting Physician to the Massachusetts General Hospital, saw the first administration of ether there, and have a vivid recollection of the professional interest in the successful experiment. If Wm. T. G. Morton had presented the subject to the medical profession in the manner in which scientific men and physicians are accustomed to publish a discovery or an invention—as something that belongs to science—making no concealment or false pretence, the credit of his discovery would have been unanimously awarded to him.

But his experiments were purely in mercantile interest. He wished to conceal the nature of the substance he was using. He came to the hospital surgeons with a false statement. He had colored the ether, and stated that it was a composition, whose ingredients were his own secret. He called it "letheon." He wished to secure the endorsement of the medical profession, but reserve for himself control over its use. Medical men surmised that it was simply sulphuric ether—which he was soon obliged to allow.

There is no question that the use of sulphuric ether as an anesthetic at that time was due to the enterprise of Morton; and he would never have found it necessary to make any claim for the credit of it, if he had conducted himself honorably in relation to it.

Yours very truly,  
WM. HENRY THAYER, M.D.

## METEOROLOGICAL RECORD

For the week ending December 12th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...8	30.11	45	56	34	79	68	74	S.	S.W.	12	15	.99
M...7	30.12	45	54	36	72	70	71	S.W.	N.W.	12	10	
T...6	29.25	38	46	31	78	76	77	N.W.	S.E.	6	8	
W...9	29.49	47	54	40	82	90	91	S.W.	S.W.	20	11	
T...10	29.70	44	48	39	72	72	72	S.W.	S.W.	10	6	
F...11	30.02	37	41	33	75	81	81	N.W.	N.E.	9	4	
S...12	30.27	41	50	32	62	75	68	S.W.	S.W.	9	10	

\* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 12, 1896.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,892,332	647	209	13.20	15.90	1.95	1.95	5.70	
Chicago	1,678,967	377	138	17.28	4.32	4.32	2.18	5.67	
Philadelphia	1,164,000	427	132	14.28	16.18	.92	2.78	8.74	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	560,000	—	—	—	—	—	—	—	
Boston	494,005	204	58	13.23	15.68	.98	1.96	10.29	
Baltimore	490,315	175	56	10.26	9.72	1.62	1.62	4.32	
Cincinnati	326,000	120	29	7.65	8.50	—	2.60	4.15	
Cleveland	311,637	83	27	14.40	7.20	1.20	4.80	8.40	
Washington	275,500	80	24	12.00	17.00	2.50	5.00	2.50	
Pittsburg	238,617	95	29	21.20	8.24	9.54	4.24	5.80	
Milwaukee	275,000	—	—	—	—	—	—	—	
Nashville	87,754	28	9	7.14	17.85	7.14	—	—	
Charleston	60,165	33	9	9.09	9.09	9.09	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	98,687	29	13	17.25	17.25	3.45	—	—	
Fall River	88,000	34	14	14.70	8.82	8.82	—	2.94	
Lowell	84,359	33	9	6.08	12.12	—	—	—	
Cambridge	61,619	51	8	19.35	19.38	3.23	6.46	—	
Lynn	62,550	9	4	—	24.22	—	—	—	
New Bedford	55,254	16	6	—	12.50	—	—	—	
Springfield	51,634	11	2	9.09	18.18	—	—	9.09	
Lawrence	52,153	16	6	—	12.50	—	—	—	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	3	0	—	—	—	—	—	
Brookton	33,157	3	1	—	—	—	—	—	
Haverhill	30,185	7	1	14.28	14.28	—	—	—	
Malden	29,709	10	5	—	20.00	—	—	—	
Chelsea	31,255	11	2	9.09	21.27	—	—	9.09	
Fitchburg	26,394	5	3	40.00	—	20.00	—	—	
Newton	27,222	6	2	16.66	—	—	—	16.66	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	5	1	—	—	—	—	—	
Waltham	20,877	6	2	16.66	33.33	—	—	16.66	
Quincy	20,712	—	—	—	—	—	—	—	
Pittsfield	20,447	5	1	—	—	—	—	—	
Everett	18,678	2	1	—	—	—	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,554	7	1	14.28	14.28	—	—	14.28	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 2,609: under five years of age 821; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 332, acute lung diseases 378, consumption 291, diphtheria and croup 145, diarrheal diseases 61, typhoid fever 59, scarlet fever 26, whooping-cough 16, erysipelas and measles 9 each, cerebro-spinal meningitis 7.

From scarlet fever New York 9, Boston 6, Providence 4, Philadelphia 3, Baltimore, Worcester, Fall River and Haverhill 1 each. From whooping-cough Philadelphia 5, New York 4, Boston 2, Chicago, Baltimore, Pittsburgh, Providence and Fall River 1 each. From measles New York 4, Chicago, Pittsburgh, Worcester, Cambridge and Woburn 1 each. From erysipelas New York and Chicago 3 each, Providence, Lowell and Fitchburg 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,846,971, for the week ending December 5th, the death-rate was 19.4. Deaths reported, 4,041: acute diseases of the respiratory organs (London) 374, diphtheria 87, measles 80, whooping-cough 71, scarlet fever 59, diarrheas 36, fever 33.

The death-rates ranged from 12.4 in West Ham to 28.3 in Plymouth: Birmingham 22.4, Bradford 18.7, Cardiff 15.7, Gateshead 22.8, Huddersfield 18.7, Leeds 20.2, Leicester 19.9, Liverpool 24.6, London 18.9, Manchester 18.6, Newcastle-on-Tyne 18.7, Nottingham 19.9, Sheffield 18.2, Wolverhampton 18.7.

## OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 19, 1896.

L. B. BALDWIN, surgeon, detached from the "Newark" and ordered to the "Puritan."

S. G. EVANS, passed assistant surgeon, detached from the "Pinta" on reporting of his relief and ordered to the Naval Hospital, New York.

G. ROTHGANGER, passed assistant surgeon, detached from the "Patterson," December 25th and ordered to the "Pinta," per steamer of December 29th.

## OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SIXTEEN DAYS ENDING DECEMBER 16, 1896.

WHITE, J. H., passed assistant surgeon. Granted leave of absence for fifteen days from December 12, 1896.

KINYOUN, J. J., passed assistant surgeon. Granted leave of absence for thirty days from December 1, 1896.

ROSENAU, M. J., passed assistant surgeon. Granted leave of absence for thirty days from December 2, 1896.

NYDEGGER, J. A., passed assistant surgeon. Directed to report at Bureau, January 3, 1897, for temporary duty in Bacteriological Laboratory. December 9, 1896.

BLUE, RUFERT, assistant surgeon. When relieved from duty at San Francisco Quarantine to proceed to New York, N. Y., for temporary duty. December 10, 1896.

JORDAN, W. M., assistant surgeon. To proceed from New York, N. Y., to San Francisco Quarantine for temporary duty. December 10, 1896.

## SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 28th, at 8 o'clock.

The following papers will be presented:  
Drs. G. A. Walton and W. A. Brooks, Jr.: "Observations on Brain Surgery, suggested by a Case of Multiple Cerebral Hemorrhage." Discussion by Drs. M. H. Richardson, Harris, Wright and Bullard.

Dr. K. W. Lovett: "The Prevention of Flat-foot and Similar Affections of the Foot, with a Demonstration of a Method of Examining the Feet." Discussion by Drs. Bradford, Rowe and Thomas Dwight.

Dr. Morton Prince: "Hysterical Monocular Amblyopia, Co-existing with Normal Binocular Vision, with reports of Two Cases." Discussion by Drs. Wadsworth, Chandler, J. J. Putnam and Walton.

JAMES G. MUMFORD, M.D., Secretary, 197 Beacon St.

## BOOKS AND PAMPHLETS RECEIVED.

A Practical Treatise on Medical Diagnosis for Students and Physicians. By John H. Musser, M.D., Assistant Professor of Clinical Medicine in the University of Pennsylvania; Physician to the Philadelphia and the Presbyterian Hospitals; Consulting Physician to the Woman's Hospital of Philadelphia and to the West Philadelphia Hospital for Women; Fellow of the College of Physicians of Philadelphia; Member of the Association of American Physicians; President of the Pathological Society of Philadelphia, etc. Second edition, revised and enlarged. Illustrated with 177 wood-cuts and 11 colored plates. Philadelphia and New York: Lea Brothers & Co. 1896.

A Manual of Pharmacology and Therapeutics. By William Murrell, M.D., F.R.C.P., Physician to, and Lecturer on Pharmacology and Therapeutics at the Westminster Hospital; Late Examiner in Materia Medica at the University of Edinburgh, and Examiner in Materia Medica and Pharmacy to the Conjoint Board of the Royal College of Surgeons of England, and the Royal College of Physicians of London. Revised by Frederick A. Carite, M.D., Member of the Committee for the Revision and Publication of the Pharmacopoeia of the United States of America and late Lecturer on Pharmacology at Bellevue Hospital Medical College; Physician to the Presbyterian Hospital, etc. New York: William Wood & Co. 1896.

## Original Articles.

THE MODERN TREATMENT OF MALIGNANT DISEASE.<sup>1</sup>

BY J. COLLINS WARREN, M.D.

It seems as if in the present march of surgery, with the changes which are going on so rapidly, that it might be of interest, even to gentlemen as conversant as you are with the progress of medicine and surgery, to go over the ground which the title of the paper indicates to see if there are not some new points which may be worthy of your consideration.

I do not think it is worth while to go into the question of the etiology of cancer. As to its parasitic origin that is still a *terra incognita*. We know at present practically little or nothing about it, but I think the experience of surgeons as they deal more and more with the problem of the treatment of malignant disease leads them to conclude that cancer is originally a localized disease, and not, as Sir James Paget and other writers and pathologists of his period have endeavored to show, a constitutional affection. Experience with the lip, and the success with which we are able to eradicate disease in that particular spot, owing to its accessibility, owing to the possibility of getting a wide margin with the knife around the disease, and experience with cancer on the surface of the body, brings with it the inevitable conclusion that we can effect a cure; provided we can get far enough away from the original focus, and it is in disease in those localities only where the complications, the anatomical structure is such that we cannot do this, that we have concluded that the disease is incurable. Cancer then need not be considered incurable in itself, but incurable from its surroundings. I think there will be few who will oppose this position.

In going over the modern operative treatment of malignant disease it would be a great omission not to say something about anatomical structures, and the anatomy of cancer is practically the anatomy of the lymphatic system. The old works on the lymphatic system, like Mascagni's, give such complicated injections of the lymphatics that the student comes to the conclusion practically that everything is lymphatic, just as everything is capillary, and no distinct picture is left consequently on the mind of the distribution of the lymphatics in particular organs; and yet when we begin to study from the point of view of disease, I think the fact is borne in upon us very strongly that certain localities have certain marked peculiarities in the distribution of the lymphatic stream, and that a competent knowledge of those peculiarities gives us a guiding principle in the surgical treatment of a particular organ. It is another illustration of the fact that morbid anatomy is one of the best ways of studying normal anatomy, that the injections made by diseased tissues show us the natural pathways in the system even better than some of the most elaborated artificial injections.

I shall not go into the anatomical part of this subject except in considering the treatment of the disease in certain particular localities; I shall speak briefly of it then.

There are, as you know, two varieties of malignant growths, sarcoma and carcinoma; and although the

older anatomists used to teach us that sarcoma was distributed principally through the blood-vessels while cancer was distributed through the lymphatics, I do not think the surgeon of experience can coincide with that view. The more he sees of sarcoma the more he is prepared to hunt out and seek for infected lymphatic glands, and I think that it would be hard for him to accept the view that sarcoma is not disseminated through the lymphatic system as well as carcinoma.

There is one thing that we are struck with in reading over the literature of the operative treatment of malignant disease, and that is that enterprising surgeons, whose example perhaps the more conservative of us might not wish to imitate on all occasions, frequently arrive at surprising results. They are forever using the knife, and sometimes they succeed in accomplishing what others despair in doing. The history of surgery teems with such examples.

In sarcoma we know the disease is for a certain length of time, perhaps for a greater length of time than in carcinoma, localized; that it will recur locally several times before we begin to find metastasis to distant organs. Mott operated fifteen times over a space of twenty years on a case of sarcoma, and the patient was finally cured; at all events the patient lived twenty-three years. Gross operated twenty-three times on a case of sarcoma during a space of four years. Dennis mentions a case of carcinoma in which over 300 carcinomatous nodules were removed separately from a single patient, who was alive at the time of reporting the case.

We find a great difference in the malignancy of malignant disease according to the locality in which it is situated. This is perhaps not so true of sarcoma as it is of carcinoma; in carcinoma we have certainly a wide range in the degree of malignancy. In sarcoma we do have a distinct range, although perhaps not so great a one. We see, for instance, a difference according as the disease is situated on the outside or the inside of a bone; the subperiosteal sarcomas appear more malignant than the central sarcomas, and certain varieties of central sarcoma are comparatively benign. In 17 cases of subperiosteal sarcoma Gross reported eighty-two per cent. of cures; and it certainly is a very encouraging result that in any form of malignant disease we should have over 80 per cent. of cures. In 34 cases of central sarcoma only 62 per cent. were cures. That seems as if in the subperiosteal the percentage of cures was better than in the central; but in 22 cases of myeloid disease, giant-cell sarcoma, there were 17 cures and only five cases of recurrence. Sarcoma will often remain a very long time localized in an organ like the breast; on the other hand, on the extremities it seems more intimately associated with the lymphatic system and spreads with greater rapidity. Sarcoma on the foot is, as a rule, an extremely malignant form of disease, and it is necessary to go a long distance to the adjacent cluster of glands in the popliteal space and to amputate in the thigh in cases of sarcoma at so distant a point as the foot. We must be on the lookout in all such cases for the lymphatic glands, either in the popliteal space or in the groin. In the case of a sarcomatous ulcer between the toes which I removed, the disease not covering a space larger than the thumb-nail, there was a recurrence of the disease in the inguinal glands a year later, and death from metastasis in the viscera a few months after the discovery of the nodule in the groin; so that an extremely

<sup>1</sup> Read at a regular meeting of the Suffolk District Medical Society, November 14, 1896.



trivial and small focus of disease will lead to death in a shorter time perhaps than some of the most formidable growths that we see in the clinics.

Sarcoma, therefore, is a treacherous disease, and although in a certain percentage of cases we may get cures, and the percentage sometimes is a very encouraging one, there are plenty of inoperable cases where we seem to despair of effecting anything like cure. We have a ray of hope, however, in the toxin treatment; and the method adopted by Coley, which is, as you are aware, a combination of the toxins of erysipelas and the bacillus prodigiosus, occasionally brings about a favorable result. Coley's papers are published yearly, and each year a few successful cases are added to the list. In conversing with him last winter I saw some very favorable reports sent to him by physicians from distant parts of the country. I have one case which seems well worth describing.<sup>1</sup> At an examination made by myself about two weeks ago the hardness and induration of the neck had entirely disappeared and it seemed evident we had here a case temporarily cured by the Coley method of treatment. It seems to me an encouraging case because at first the prognosis was very unfavorable.

We come now to the treatment of cancer. I have alluded to cancer of the lip as being one of the most easily treated forms of cancer, but you all know how often the disease recurs even after the usual operation by the V-shaped incision. There has been a tendency of late years not to give ether in cases of cancer of the lip, and to operate upon them in the out-patient departments by injecting cocaine. I think this is a move in an entirely wrong direction. Any of you who have had the misfortune to watch such a disease to its painful termination know the horrors of it, and that we should dismiss the operation in such an off-hand way is to me not in accordance with the principles of modern surgery. Therefore, I think that we want to treat cancer of the lip as we ought to treat cancers in all regions; and this is the general bent of my remarks, that we should attack not only the original focus of the disease, but all possible sources of infection, if it is possible to reach them. In the early stages of cancer it is, of course, as a rule, possible to reach the adjacent infected glands, and so with cancer of the lip. I believe it is important not to content ourselves merely with the V-shaped incision, but that we ought to imagine the original focus working its way from the point of origin through a lymphatic vessel and being temporarily arrested in the network of a lymphatic gland, and we ought to base our operation on that idea. Consequently, we ought to remove in cancer of the lip such a mass as you see in this picture. There is the lip with the long V-shape incision continued under the chin and along the region of the submaxillary gland. It is easier to take the gland out than to try to leave it, and with the gland you may take some possible pin-point nodule of infected lymph structure; we should adopt the same principle as is now generally accepted in the treatment of cancer of the breast. I perform this operation now in every case that comes to me for treatment, and the resources of antiseptics are such that such an operation heals rapidly and the patient really is unconscious of having any more of an operation than after the old method.

Cancer of the skin possesses a wide range of malignancy. The higher up we go in the body the less

malignant it is; about the temples, face and nose, above the line of the mouth we have a comparatively innocent area. On the lower lip, on the backs of the hands, on the scrotum, the genitalia we have perhaps a very much more marked type of malignant disease. About the feet, the lower extremities, we often have a mild type growing very slowly, particularly in scars and at the openings of old sinuses. Amputation of the epidermoid forms of cancer not infrequently is followed by a permanent cure. We know how successful is early and radical treatment of cancers about the face. Such cases often come, as the surgeon would have them come, at the early stage when merely a wart or nodule or slightly broken-down papilla exists and I think the temptation of the surgeon at this time is not to do his duty, but to burn them with a feeble form of caustic. Nothing, it seems to me, has a more deleterious action on the nature of such a growth than an unsuccessful attempt to destroy it by cautery, which stimulates the growth from a comparatively benign form into a much more malignant variety. A free incision around these growths, with suture, gives you healing by first intention, a scar which disappears entirely within a year and almost inevitably a permanent cure, whereas attempts to treat with nitrate of silver or with the galvano-cautery or with acids are uncertain and may have to be repeated, and they are sure to leave much more of a scar.

Cancer on the lip, back of the hand, glans penis and of the vulva are forms of cancer which should be classified together as being of about the same type of malignancy. Cancer of the vulva and glans penis I think are both forms capable of cure if taken early, but I think there is a disposition on the part of many surgeons to regard cancerous ulcer of the vulva as a very malignant type, and I have known such cases to go untreated until the whole region became a yawning chasm of broken-down and sloughing tissue. I have seen the disease staved off and life prolonged, and I think in a number of cases permanent cure effected, by free and early excision of cancer of the vulva and cancer of the glans penis. When we come to the body of the penis then we have a much more formidable disease, and I believe there that a very much more radical operation than mere amputation should be performed. Pearce Gould has recommended splitting the scrotum, dissecting the crura and following up this by a careful dissection of one or the other groin. I think at least an operation of that magnitude should be performed if any operation is undertaken, otherwise we shall have a history lasting perhaps a number of years of gradual recurrences, and finally death from metastasis to the internal organs.

In cancer of the breast and cancer of the uterus we have perhaps as interesting examples of the infection of the lymphatic system as of any other, and they are more particularly interesting to us because they are the two most common types of cancer. I have therefore put some diagrams here for the purpose of illustrating the dissemination of cancer of the breast and also of the uterus. This is a picture taken from Sappey. You will see that the main lymph trunks spring from the lower hemisphere of the breast and from the outer hemisphere and less from the upper and inner. It is consequently along those vessels chiefly that spreading of the disease takes place. A bunch of glands just beyond the margin of the pectoralis major is usually the first to be infected after the disease

<sup>1</sup> See page 488 of the Journal.



leaves the breast. We have in the axilla generally three clusters of glands, one beneath the pectoralis major, another near the apex of the axilla and one towards the brachial aspect of the axillary space. The pectoral pleiad is the one first affected and after that the infraclavicular nodes, and following the blood-vessels we get finally the supraclavicular region. It is not only in that direction that infection spreads, but off towards the inner side along the sternal border of the breast, and if we look at the inside of the thorax we see a rich anastomosis of lymphatics coming from the outside beneath the pectoralis major and uniting in a chain of lymphatics which run with the internal mammary artery along that side of the anterior mediastinum; so that occasionally when the primary nodule is situated on the inner half instead of the outer half of the breast we may have infection of these glands. Even progressive surgeons have frequently overlooked one of the commonest sources of fatal infection in disease of the breast and that is the pectoral region, and while making a deep and bold dissection beneath and above the clavicle, they fail to take away enough of the integuments.

I have here a picture which shows how infection of the skin takes place, how disease originating in the mammary gland comes up through the suspensory ligaments, little bands of fibrous tissue connected with the columnæ adiposæ, which I described some time ago. It is through these little ligamentous connections that the lymphatic vessels come to the surface and infection takes place through them, and transforms a case of cancer of the mammary gland into a specimen of *cancer en cuirasse*. I have a diagram to show the line of incision I make now. I prolong the upper incision down to the pectoralis muscle, detaching the sternal portion of the muscle and tilting this whole mass over outwards, hinging it on this lower incision, dividing the pectoral at its humeral insertion, dividing the clavicular portion by a vertical incision, cutting across the pectoralis minor and dissecting the axillary vessels and finally dividing the mass on the outer edge and taking away the whole disease in one mass, axilla and breast at the same time, as is indicated in that diagram. That is, in a nutshell, the operation first described in detail by Halsted. By careful consideration of hemostasis, avoiding sepsis, we can safely perform an operation like this which takes from one to two hours. This method, however, involves leaving the wound open and first intention cannot therefore be obtained. I have attempted to do this operation and at the same time obtain union by first intention. This I accomplished by taking flaps from below.

I will close by saying a few words in a suggestive way about hysterectomy for cancer. I hoped to show you a specimen of cancer of the uterus involving the ureters, the patient having gone seventeen days without passing more than four or five drachms of urine and dying with marked uremic symptoms. The disease involved the bladder, ureters, and all the surrounding parts in that neighborhood. The drawing on this side gives an idea of the lymphatics of the uterus, the glands lying near the iliac vessels and the extensive communications with distant portions of the body through the broad ligaments. Under those circumstances it seems as if the operation for vaginal hysterectomy for cancer ought to be put on a par with Whitehead's operation for cancer of the tongue; that is to open the mouth, seize the tongue with a pair of forceps and

with a pair of scissors cut out the tongue. Now we know that, as in the old operation for cancer of the breast, such a method leaves out the strategic point of the disease. The glands in the upper triangle of the neck are left untouched, and so the glands in the parametrium are left untouched by the ordinary operation for vaginal hysterectomy, such as we see here where the broad ligaments in the inner edges are seized by the clamps or by the ligature. By such an operation as that we really leave behind a most important region of infection. Now this diagram which I copied from the *Johns Hopkins Bulletin* shows how in an abdominal hysterectomy we may seek to carry out a rational operation for the cleaning out of all infected cancerous districts in the case of cancer in the uterus. This diagram gives you the lines of the incision through the peritoneum, exposing the infected glands lying in clusters upon the iliac vessels at the brim of the pelvis.

It would seem as if no operation for the removal of cancer of the uterus would be worth considering which did not contemplate a careful dissection of that region.

### SERO-THERAPY.<sup>1</sup>

BY CHARLES F. WITHERINGTON, M.D.,  
Visiting Physician, Boston City Hospital.

IN the few years since its inception serum-therapy has been directed against a large number of diseases, including such as rabies, snake-bite, cholera, bubonic plague, typhoid fever and pneumonia.

Those best deserving our attention in this connection are four: diphtheria, tetanus, tuberculosis and streptococcus infection, and to these conditions the present paper will be limited, the consideration of them all being necessarily brief and incomplete.

In the first of these sufficient experience has now been accumulated to warrant a fairly definite opinion as to its value. In view of the extended discussion which this part of the subject has received, I shall not dwell upon it, but shall merely call attention to two facts of importance: first, the report of the American Pediatric Society, issued the past summer. This report embodied the experience of 615 physicians with the remedy in private practice; and of these more than 600 expressed themselves as strongly convinced of its value. The general mortality under its use was about the same as had been reported in hospital cases, namely, twelve per cent., and the surprising fact was brought out that of 1,256 laryngeal cases so treated one-half recovered without operation, while of 538 cases that came to intubation the mortality was only 25 per cent.

A second point worthy of note in this connection is the complete collapse of the plaintiff's case in the attacks made upon sero-therapy by its most conspicuous opponent, Dr. Winters of New York. The statements of this writer as applying to the Willard Parker Hospital of New York had been refuted by Park and others, and his more recent views regarding the methods and results of the treatment in Berlin have been completely disproved by Baginsky, who, as the director of the hospital whose methods Winters has assumed to describe, says that "all his conclusions are incorrect, and are based on such faulty observations as to amount almost to misrepresentations."

<sup>1</sup> Read before the Suffolk District Medical Society, November 14, 1898.

I believe, then, that it may be considered a generally accepted fact that in diphtheria antitoxin is our most useful single therapeutic agent, and that when used early it gives a considerably larger proportion of cures than were attained before this agent came into use.

Tetanus was made the subject of immunizing experiments upon animals almost simultaneously with diphtheria, and in 1892 the first injection of the serum from an animal thus immunized was made for the cure of the disease in a human being by Ritter. The patient recovered. Since then a considerable number of cases have been put upon record. More than a year ago Marson<sup>2</sup> collected 38 cases so treated with 25 recoveries. My own personal experience is limited to one case which I have reported elsewhere.<sup>3</sup> It occurred in a woman about a week after an abortion. She received four injections of tetanus antitoxin from the nineteenth to the twenty-six days of her illness, and made a good recovery. The disease was of the subacute variety, but the spasms were severe and averaged before treatment from fifteen to twenty per hour.

The comparative infrequency of tetanus makes it difficult as yet to draw conclusions as to the real effectiveness in it of sero-therapy though the figures given compare favorably with the mortality of the disease under previous methods of treatment. It certainly deserves trial in every case of the disease.

The third of the diseases referred to for which hopes have been built upon sero-therapy is tuberculosis, and in proportion to the greater frequency and higher mortality of this disease, has professional interest in its possible control been correspondingly great. Before coming to the serum treatment (strictly speaking) of phthisis we must glance for a moment at some of its immediate precursors which were themselves direct sequels of Koch's great discovery of the tubercle bacillus.

First in importance, of course, to come to our minds in this connection is tuberculin. Announced first (and somewhat prematurely) by its eminent discoverer at the International Medical Congress of Berlin in 1890, it aroused hopes out of proportion even to the claims of its author. A product of the culture of the tubercle bacillus, it was believed to cause necrosis of the tissues in which the invading organisms lay, and thus, while not being directly fatal to them, to hinder their further activity. That the new remedy was a very powerful substance was at once evident. But that the intense reaction which it set up in tuberculous subjects was of any advantage to them became soon very doubtful. First reports are notoriously optimistic, in proportion as the period covered is brief and the disease of which they treat is a protracted one. Yet the first official report published by the Prussian Government and covering only two months of the use of tuberculin, gave results no better than were attained under previous modes of treatment. The wide and deep disappointment of the profession after a few months' experience of tuberculin is too fresh in our minds to make us willing to go through a similar experience with any of its successors.

The diagnostic value of tuberculin is the only advantage which the experience of six years has left unchallenged. The general correctness of its indications in the hands of veterinarians as to the existence of

tuberculosis in herds of neat-cattle is sufficiently well known. And in the human subject with tuberculosis an injection of one to three milligrammes will show, if a three-hour chart be carefully kept, a marked rise of temperature after ten to fifteen hours, in almost every case.

It is still claimed by a small minority of physicians that tuberculin has a real curative action in cases of incipient phthisis, *provided* it is begun in very minute doses, doses so small as to avoid much febrile reaction and then increased, the dose being always kept below the point of causing reaction until a tolerance is established for comparatively large doses. These small injections avoid the undoubtedly injurious coagulation necrosis about the tubercular foci, and it is possible by keeping up a slight continual excitation about them favor their encapsulation or even calcification.

Early in the use of tuberculin it became evident that it was an exceedingly complicated substance of whose chemistry neither its author nor any one else knew very much. That some of its components might prove to be responsible for its ill effects and might be separable from what in it was useful was a hope naturally aroused. Among the first to seek by the elimination of certain constituents to obtain a resultant that would be wholly beneficent in action was Hunter in England. He prepared several modifications of Koch's tuberculin of which he found some incapable of causing fever, and others not likely to produce local inflammation, but of his tuberculin modifications little has of late been heard, and it seems probable that they gained their bland qualities only by becoming emasculated as tuberculin.

Klebs, following the same idea, experimented with tuberculin, and showed, as he believed, that it contained organic bases, alkaloids, precipitable from tuberculin by platinic chloride. That in the residue left after their removal was an albumose precipitable by alcohol, which constituted the curative principle of tuberculin and which was innocuous. To this latter substance he gave the name of tuberculocidin or alexin. Tuberculin, according to him, contains two per cent. of tuberculocidin. Whereas Koch admitted that he could eliminate the unfavorable results of tuberculin only by reducing the dose to a very minute quantity, Klebs claimed to be able to give a much larger dose of tuberculocidin without any ill effects.

Another substance practically nearly identical with tuberculocidin is antiphthisin. The only difference between these substances is said to be that for tuberculocidin Koch's tuberculin is used as a basis, the bacilli being left in the culture fluid while the latter is concentrated to one-sixteenth part of its original bulk, whereas for antiphthisin a ripe culture of the tubercle bacillus is used, the germs being filtered out before concentration. One of the foremost advocates of antiphthisin is von Ruck, of Asheville, whose latest report<sup>4</sup> makes the astonishing claim of 81 per cent. of apparent recoveries in early-stage cases and 35 per cent. in middle-stage cases.

This remedy is given in beginning doses of one-tenth of a cubic centimetre, either hypodermically or by rectum, and is slowly increased to one or even two cubic centimetres. Antiphthisin is considered by some to be merely a purified tuberculin and by others, as Trudeau, a diluted tuberculin. It has no germicidal power on the tubercle bacillus outside the body

<sup>2</sup> Lancet, August 10, 1895.

<sup>3</sup> Boston Medical and Surgical January 16, 1896.

<sup>4</sup> Therapeutic Gazette, May, 1896.

and the clinical results in the hands of others do not bear out the enthusiastic claims of von Ruck.

The serum treatment of tuberculosis, as distinguished from that by tuberculin and its derivatives, includes first the use of the blood serum from animals naturally relatively insusceptible to phthisis, as the goat. This was advocated by Richet and others, but is hardly deserving of much consideration.

Various experimenters have used the serum of artificially immunized animals. Among them, Paquin, of St. Louis,<sup>5</sup> reports that among pauper patients living under unfavorable surroundings, a number of cases selected by lot and treated with serum, showed a considerably less proportion of deaths than the remainder of the patients not so treated.

Chief attention in this direction has been attracted by Maragliano,<sup>6</sup> of Genoa, who prepared an antitoxic serum by inoculating dogs, asses and horses for a period of six months with progressively increasing doses of a preparation representing a culture of tubercle bacillus and then after a pause of three or four weeks (so that the serum of these animals might not contain any traces of the toxins which had been injected) drawing the blood in the usual way and employing the serum for therapeutic purposes in human beings affected with phthisis.

It is scarcely more than a year (August, 1895) since Maragliano made his first announcement of the efficacy of this serum against phthisis, but already 450 cases have been published where the treatment was used. These reports are open to the objections applicable to all recent reports of the sort, namely, that sufficient time has not yet elapsed to reveal what the real, permanent effect of the treatment will prove to be. Increase of weight, disappearance of fever and amelioration of physical signs are reported in a certain number of cases, the results being most favorable in circumscribed broncho-pneumonias, and least favorable, of course, in diffuse and destructive broncho-pneumonias.

Perhaps the best summing up of the status of serotherapy in tuberculosis, is that of Semmola, who states it thus: "To stimulate with serum-therapy the metabolism of a phthisical patient and immunize him until the bacillus is temporarily destroyed is a small matter if serum-therapy cannot cause the destruction of the congenital germ and transpose the organism into a culture medium unfavorable to the bacillus. In consequence, without waiting for control cases, it is permissible to believe that the phthisis supposedly cured by serum-therapy, simply because the body-weight has increased and fever and bacilli have disappeared, is in reality not cured and that relapse is inevitable sooner or later; and every good clinician who wishes to prove the contrary should wait at least several years before publishing his triumphs to the world in order not to abuse the credulity of patients. At the time of the illusions regarding Koch's tuberculin I knew hundreds of these poor patients who had received their certificate of cure from a complaisant director of some clinic and who within several months were all dead."

An anti-streptococcus serum, perfected chiefly by Marek of the Pasteur Institute in Paris and amended with anti-gallic fervor by Aronson, of Berlin, has been used in the hospitals of Paris and Berlin.<sup>7</sup> This serum is

not, strictly speaking, an antitoxin but is anti-infectious to the streptococcus in whatever diseases it occurs. It was therefore designed to be used in erysipelas, phlegma, angina and puerperal fever. It has been found, however, that in other diseases, as for instance, scarlet fever, where there is no evidence that the streptococcus is the specific cause of the malady, yet that some of its most fatal complications, as for instance those involving heart and kidneys, are probably due to the streptococcic contamination. In measles, in diphtheria and in phthisis, where mixed infections play an important and often fatal part, this anti-streptococcus serum has already found some favor. For it is well known that in diphtheria, for instance, the power of the antitoxin is only against the Klebe-Löffler bacillus and not any other organism which may constitute a mixed infection. It is likely that the same limitation will be true of an antitubercle serum, even if this latter should prove to be a specific cure for the tubercle bacillus, so that, as Dr. McClintock suggested in the conference on this subject before the American Medical Association last summer, perhaps the greatest field for an anti-streptococcus serum will yet prove to be in tuberculosis, where it may be said that it is often the complications that kill.

But at present the chief interest in this serum lies in its possibilities in scarlet fever. Roux reports favorably upon it. Baginsky had a mortality of 14 per cent. among 48 cases of scarlet fever treated by the serum, compared with 24 to 80 per cent., the mortality in other years.

A report submitted to the municipal council of Paris by Chantemesse<sup>8</sup> in February last, referring to the use of this serum in an erysipelas ward, was to the effect that the gravity and duration of the disease were less in the cases so treated than in those treated expectantly.

A great deal of literature on the anti-streptococcus serum has accumulated during the last year, but it is so recent as to give no warrant for a definite opinion as to the permanent value of the measure.

In conclusion, we may, I think, say that some tangible and valuable results from sero-therapy have been gained, notably those in diphtheria; that for the rest, we have something to expect, and very much to learn; and that perhaps the Scriptural saying may herein be verified, that "patience worketh experience, and experience hope."

#### HYGIENIC, THERAPEUTIC, DIETETIC, AND ECONOMIC FACTS CONCERNING EXTRACTS OF MALT.

BY CHARLES HARRINGTON, M.D.,

Instructor in Materia Medica and Hygiene in the Harvard Medical School.

It is but a few years since the term "malt extract" was considered to apply to a thick, honey-like substance extracted from malted barley at a temperature not exceeding 131° F., and brought to the proper consistence by concentration in vacuum pans. It was supposed to yield about 70 per cent. of dried residue, chiefly sugar and dextrine, and to contain about two per cent. of the ferment diastase, one part of which will convert 2,000 of starch to glucose and dextrine. A properly prepared extract should convert its own weight of starch at 100° F. in ten minutes, and at 62° F. in forty minutes.

<sup>8</sup> Gazette des Hôpitaux, February 1, 1896.

<sup>5</sup> Journal American Medical Association, 1895, vol. xxiv, p. 842.

<sup>6</sup> Deutsche medizinische Zeitung, July 27, 1896; New York Medical Journal, August 15, 1896.

<sup>7</sup> Berliner Klin. Woch., 1896. Nos. 16 and 32.

At that time, malt extract was prescribed by the physician, obtained of the apothecaries, and dispensed in doses of about four drachms.

The chief reason for its medicinal use lies in the fact that diastase will convert starch to dextrine and glucose, and it has been supposed on that account to assist the digestion of starchy food.

Within a few years so great has become the popularity of malt extracts that numerous liquid preparations flood the market, and not only does the physician prescribe them, but the public incited by glowing testimonials, buys them in prodigious amounts without professional advice; and while formerly it was to the apothecary that the sufferer from impaired digestive function turned, now it is chiefly to the grocer.

Travel where we will, look where we may, everywhere are we confronted with the testimony of what malt extract has done and is doing for those, who, in various capacities, have made their names household words. Singers, actors, painters, professional beauties, lifters of heavy weights, skippers of winning yachts, after-dinner speakers, and visiting Oriental statesmen attribute all their success in their respective callings to its free and constant use. Added to this evidence we may learn from the labels of several of the popular brands, that the materials from which they have been prepared have been carefully examined, and that the product is most unhesitatingly pronounced of great medicinal value by no less eminent a medical authority than a "State assayer of ores and minerals."

The old idea that malt extract should be a substance of the consistence of thick honey, containing the ferment diastase, free from all trace of alcohol, and to be prescribed in doses of about a tablespoonful, has given way very largely to one that it is a liquid preparation more or less effervescent, to be drunk by the glass or *ad libitum* with meals and on retiring.

I have found twenty-one different brands of liquid malt extracts, and have examined them as to their composition, and also as to their diastasic power, upon which, of course, their value as true malt extracts is dependent. The conditions in which their use is asserted on the various labels to be of great benefit, include all digestive, respiratory, nervous and mental troubles, but the one point upon which they nearest approach unanimity is with regard to their unusual value to nursing mothers, to which no less than fourteen testify.

Nearly all are recommended in doses of a wineglass, with or before meals and on retiring, some in larger doses, and one, which claims with more or less right to be a "substitute for all alcoholic drinks," itself containing over five per cent. of alcohol (more than in ordinary beer), "at table, by persons in fair health, may be taken *ad libitum*." For many of them great richness in diastase is claimed; one claims to have its diastase Pasteurized.

The results of analysis are shown in Table I.

Struck by the resemblance of many of the extracts to beer, porter and ale, I obtained and analyzed as fair samples of these latter, one specimen each of light-colored and dark-colored beer, one of ale and one of porter. The results are given in Table II.

It will be observed, on comparing the two tables, that nine of the extracts contain more alcohol than the weaker of the two beers, six contain more than the stronger beer, four contain more than the ale, and two are more alcoholic than the porter. Comparing the

residues, which consist chiefly of sugar, it will be noticed that but six of the extracts contain more than does the domestic Culmbacher beer.

TABLE I.

BRAND.	Specific Gravity.	Alcohol.	Total Residue.	Ash.
Beefmalt . . . . .	1.0523	1.56	13.066	0.428
Gahm's Malt Extract . . . . .	1.0156	6.07	6.328	0.232
Hercules Malt Wine . . . . .	1.0378	6.07	11.634	0.624
Hercules Extract of Malt . . . . .	1.0149	3.29	8.130	0.202
Hoff's (Eisner & Meudelsohn) . . . . .	1.0313	2.56	8.187	0.197
Hoff's (Tarrant's) . . . . .	1.0288	4.37	6.862	0.262
Leicester's English Malt Extract . . . . .	1.0263	2.83	8.040	0.238
Liquid Bread . . . . .	1.0168	5.37	6.180	0.214
Malt-Nutrine . . . . .	1.0655	0.74	13.630	0.250
Malt Wine (Haffenreffer & Co.) . . . . .	1.0279	4.25	8.666	0.290
Menzel's Extract of Malt . . . . .	1.0193	3.59	6.310	0.280
Mulford's Digestive Malt Extract . . . . .	1.0196	1.31	6.632	0.250
Norris Extract of Malt . . . . .	1.0387	3.88	11.455	0.256
Old Grist Mill Malt Extract . . . . .	1.0343	3.82	11.060	0.280
Pabst Malt Extract . . . . .	1.0280	4.10	8.686	0.312
Pasteurized Extract of Malted Barley . . . . .	1.0156	3.88	5.290	0.230
Puremalt . . . . .	1.0271	5.56	8.436	0.405
Tentonic . . . . .	1.0286	6.28	9.458	0.396
Vitamalt . . . . .	1.0222	4.69	7.205	0.264
Wampole's Extract of Malt . . . . .	1.0257	7.13	9.534	0.365
Wyeth's Extract of Malt . . . . .	1.0640	1.37	12.856	0.390

Diastase absent in all of the above brands.

TABLE II.

BRAND.	Specific Gravity.	Alcohol.	Total Residue.	Ash.
Milwaukee Beer . . . . .	1.0173	4.12	6.220	0.182
Culmbacher Beer (Domestic) . . . . .	1.0305	5.06	9.742	0.362
Pale Ale (English) . . . . .	1.0064	5.62	4.080	0.344
Porter (Irish) . . . . .	1.0151	6.14	6.194	0.474

In addition to the examination above recorded, all of the malt extracts were tested for salicylic acid, which was found to be present in considerable amount in a number of them.

From an hygienic and moral standpoint, it cannot be said that the indiscriminate use of these preparations is to be recommended. It is a fact pretty generally recognized, that the presence of salicylic acid in food and drink is a menace to health, and in most European countries its addition to articles of food and drink, except those intended for export,<sup>1</sup> is punishable by heavy penalties.

For many reasons the presence of alcohol is equally objectionable. As everybody knows, many persons cannot take alcohol in any form without injury. Many, well aware that a single drink containing a small percentage of alcohol will lead them to repeated drinking of the same or stronger beverages until profound intoxication ensues, and that this condition once established will be maintained days at a time, rigidly refrain from all temptation to indulge their alcoholic taste. To this class the unrestricted sale of these innocent-appearing aids to digestion and increased vigor cannot be other than a great evil, and the possibility that many such, through belief in the advertised marvellous medicinal efficacy of these drinks, may have been made to fall, is so great as to require no argument.

It is most probable also that many conscientious teetotallers whom nothing could tempt to eat a Roman punch or frozen pudding, buy, drink and enjoy these cures for indigestion, insomnia and debility.

From a therapeutic point of view, there is little to

<sup>1</sup> In this connection it is interesting to note that one of the preparations containing salicylic acid is said to have been "made in Germany."

be said of their value as malt extracts pure and simple. It is not necessary to enter into a discussion of the question whether diastase does or does not act in the alimentary canal in contact with the digestive juices. If it does not, then all malt extracts are in that respect useless; if it does, then these which contain no diastase are in that respect useless; thus, either way there can be but one conclusion as to their value. Their therapeutic value as alcoholic stimulants it is unnecessary to discuss. Their dietetic value is easily seen from the figures of their analysis. The residues consist chiefly of sugar, and their food value is almost wholly to be based on the value of that substance. Switchel is valuable as a nutritive beverage in proportion to its content of molasses.

From an economic standpoint they possess no advantage over their less pretentious brothers, the beers, ales and porters. The following table shows the capacity of the respective bottles, the price paid per single bottle, and the number of cubic centimetres obtained for ten cents:

TABLE III.

BRAND.	Capacity of bottle in cubic centimetres.	Price per bottle.	Number of cubic centimetres for 10 cts.
Hoff's (Tarrant's)	260	\$ .30	87
Hoff's (Eisner & Mendelsohn)	300	.30	100
Hercules	370	.30	123
Liquid Bread	375	.30	125
Beefmalt	440	.35	126
Wyeth's	420	.30	140
Malt-Nutrino	360	.25	144
Gahm's	370	.25	148
Mulford's	375	.25	150
Teutonic	375	.25	150
Pasteurized	390	.25	156
Wampole's	390	.25	156
Pabst	400	.25	160
Vitamalt	400	.25	160
Old Grist Mill	350	.20	175
Herculine	350	.20	175
Noris	360	.20	180
Leicester's	375	.20	188
Puremalt	425	.20	213
Menzel's	365	.15	243
Malt Wine	440	.15	293
Porter (Irish)	390	.15	260
Ale (English)	390	.18	217
Milwaukee Beer	420	.05	840
Culmbacher Beer (Domestic)	400	.05	800

## Clinical Department.

### TREATMENT OF CANCER OF THE UTERUS.<sup>1</sup>

BY F. W. JOHNSON, M.D.

At the outset, in carcinoma of the uterus, we are met with two obstacles:

(1) The onset of the disease is so insidious, and in its early stage it gives rise to so few serious subjective symptoms, that, finally, when the patient is forced by repeated hemorrhages, or pain, or by both, to consult the family physician, the disease has passed beyond the possibility of a cure.

This obstacle must be removed when women learn, as they have not learned, that after confinement they should be examined and a ruptured perineum sewed up; when they learn that an increase in the amount of blood lost at menstrual periods, that any decrease in the interval between menstrual periods, that an increase

<sup>1</sup> Read before the Suffolk District Medical Society, November 14, 1896.

in leucorrhœa, or a profuse, or brown, or bloody, or offensive discharge from the vagina, demands attention. They should be taught that a show of blood, the beginning of a leucorrhœa, or an offensive vaginal discharge after the establishment of the menopause indicates danger, and its source should be investigated.

The second obstacle is the anatomical situation of the uterus. The space on either side of the uterus between it and the pelvic walls is narrow, and the bladder almost grows from the uterus at the junction of the cervix and the body. Fortunately the upward route of extension is almost invariably by the broad ligaments at the junction of the cervix and body through the intra-ligamentary lymphatics.

It is only within the past two years or so that malignant disease of the uterus has been operated on in a way to secure the removal of as wide an area of tissue as possible outside the uterus within the pelvic cavity, and to secure the removal of half or two-thirds of the vagina as might be necessary.

To accomplish this, the operation must be a suprapubic hysterectomy, the uterus with the broad ligaments and vagina should be removed in one piece, and all the glands at the bifurcation of the iliac vessels enucleated. The same rule holds good here as in operation for cancer of the breast where, Dr. Halsted says: "The suspected tissue should be removed in one piece: (1) lest the wound become infected by the division of tissue invaded by the disease, or of lymphatic vessels containing cancer cells, and (2) because shreds or pieces of cancerous tissue might readily be overlooked in piecemeal extirpation."

Since the fall of 1894 I have done a suprapubic hysterectomy in every operable case of carcinoma of the uterus, making an attempt to remove the broad ligaments to the pelvic walls, and to remove as much of the vagina as was necessary to get well beyond the disease.

The method of performing hysterectomy for cancer of the uterus, described by Dr. J. G. Clark, resident gynecologist, Johns Hopkins Hospital, and practised by Drs. Howard A. Kelly and J. G. Clark, is by far the most surgical and most satisfactory of any.

#### SUMMARY OF STEPS.

(1) Insert bougies into the ureters under the local effect of cocaine, to save time and conserve the patient's vital powers for the operation.

(2) Place patient in the Trendelenburg posture, and make abdominal incision of sufficient length to insure free manual movements.

(3) Ligate upper portion of broad ligament with ovarian artery; divide vesico-uterine peritoneum around to opposite side; push bladder off, and spread layers of ligament apart, exposing uterine artery.

(4) Dissect uterine artery out for two and one-half centimetres from uterus beyond its vaginal branch, and tie.

(5) Dissect ureter free in the base of the broad ligament.

(6) In order to expose most perfectly the lymphatic glands at the bifurcation of the external and internal iliac arteries, it is necessary to ligate and cut the broad ligament as close to the pelvic brim as possible. After cutting the broad ligament away from the brim of the pelvis close to the iliac vessels, the excision should be carried down towards the pelvic floor, great care bein

observed to dissect out all of the intra-ligamentary glandular and cellular tissue with it.

Especial attention should be paid to the glands at the bifurcation of the iliac vessels, which may not be visible, but can be palpated.

(7) When the excision of the broad ligament has been carried down to a point on the pelvic wall corresponding to a transverse line passing through the vesical orifices of the ureters, it is suspended, and the excision of the base of the ligament, which lies in such close relation with the bladder, ureters and rectum, is completed later from below, upward.

(8) Proceed on the opposite side in the same manner as on the first side.

(9) Perforate vagina with sharp-pointed scissors, making strong traction on uterus with small vulsellum forceps so as to pull the vagina up and make its walls tense, then ligate in small sections, and cut each segment as it is tied.

(10) Insert iodoform gauze from above into raw space left by the hysterectomy; draw vesical and rectal peritoneum over this with a continuous suture.

(11) Irrigate pelvic cavity and close abdomen without drainage.

The time since this more radical operation for carcinoma of the uterus has been employed, is too short to fairly estimate its value, but it certainly promises well.

I have tabulated the cases operated on by myself from October, 1894 to October, 1896. In every case a diagnosis of carcinoma was made by a pathologist.

There were ten cases. Three died from the immediate effects of the operation. Three are alive and in perfect health, sixteen months after the operation; one of these has gained 100 pounds, and at the time of the operation she was the most unpromising one of the three. One is alive, with no return of the disease twelve months after the operation. One is alive, with no return of the disease eight months after the operation. In two the disease has returned; in both cases it returned in the scar tissue at the vault of the vagina.

From the *Johns Hopkins Hospital Bulletin* I find, "with regard to mortality and regionary recurrence, in 37 cases of cancer of the cervix, the results were as follows: 10 per cent. died from the immediate effects of the operation, 88 per cent. died with recurrence, 5 per cent. were not heard from, and 43.2 per cent. were still alive after a period of one to five years. . . . In none of the fatal cases could a distinct history of metastasis to other organs be elicited, but all died from local recurrence. . . . This clinical observation is further substantiated by the records of ten autopsies on inoperable cases, made in the Pathological Department of the Johns Hopkins Hospital, which show metastases in only one case beyond the pelvic and retroperitoneal lymph glands.

#### ST. ELIZABETH'S HOSPITAL.

CASE I. December 27, 1894. J. M. S., twenty-nine years of age, widow, white.

Family History: one aunt and two great-aunts had carcinoma of the breast.

Duration of Symptoms: Been unwell every three weeks for five months.

Marital History: One child. No miscarriages.

November 4, 1894. The cervix was cut away, the curette thoroughly used, and the excavation packed

with cotton wet with a 50-per-cent. solution of zinc chloride.

December 29th. Complete hysterectomy. The disease had extended on both sides into the base of the broad ligament. It had extended to the pelvic walls. The disease had not extended upwards beyond the internal os. The operation required two hours and forty minutes for its completion.

Discharged. Died forty-eight hours after the operation.

CASE II. February 18, 1896. M. S., forty-nine years of age, married, white.

Family History: Two aunts and one cousin died of cancer.

Duration of Symptoms: A few weeks.

Marital History: One child.

Menstruation began at sixteen years; flow moderate, lasting five days; regular; no dysmenorrhea.

February 20th. Complete hysterectomy.

Discharged March 28th.

October, 1896 (eight months after the operation). No return of the disease. Excellent health.

CASE III. April 25, 1896. S. F., aged twenty-nine years, widow, white.

Family History: Negative.

Duration of Symptoms: Eight months.

Marital History: One child. No miscarriages.

Menstruation began at sixteen years; flows every four to five weeks; flow slight, lasting three days.

April 28th. Hysterectomy, with removal of part of the vaginal wall.

Discharged May 26th. The disease had returned on the anterior vaginal wall, and there was a small vesico-vaginal fistula.

October 24, 1896. No pain. No vaginal discharge. She calls herself perfectly well, except that her urine runs away a little every day or two. She works in the shop all day.

#### WOMAN'S CHARITY CLUB HOSPITAL.

CASE I. March 25, 1895. L. P., white, aged thirty-six years, married.

Family History: Negative.

Duration of Symptoms: Seven months.

Marital History: Three children. No miscarriages.

Menstruation began at thirteen years; flow has increased since last September; at times severe hemorrhage at menstrual periods; regular; no pain; lasting five days.

Thirteen years ago had a "carcinoma" removed from her shoulder.

March 28th. Hysterectomy.

Discharged April 25th, to all appearance well. The disease had not extended beyond the internal os.

October 13, 1896. "In reply to your letter, will say that I have had no return of the trouble; am in better health than I have been for twenty years, and have gained 100 pounds."

October 26, 1896. Examined at my office, and no evidence found of any return of the disease.

CASE II. May 23, 1895. J. H. C., white, aged forty-four years, married.

Family History: Negative.

Duration of Symptoms: Been poorly for two years. Constant flowing for the past two months.

Marital History: Three children. No miscarriages.

Menstruation began at sixteen years; flow profuse, lasting about a week; irregular for past two years; no

pain. During past three months several uterine hemorrhages.

May 23d. Hysterectomy, with removal of cuff of vaginal wall.

Discharged June 16th.

October, 1896 (sixteen months after the operation). No return of the disease. Good health.

CASE III. May 31, 1895. Pregnancy complicated with carcinoma. E. S., white, aged twenty-eight years, married.

Family History: Negative.

Duration of Symptoms: Three months.

Marital History: Five children. No miscarriages.

Menstruation began at thirteen; flow moderate, lasting four or five days; regular until January last; not painful. More or less pain in the lower part of the abdomen since February. Had never missed a menstrual period. Had no feeling as if she was pregnant.

May 31st. Hysterectomy. Uterus contained a five months' fetus.

Discharged June 20th.

October, 1896 (sixteen months after the operation). No return of the disease. Good health.

CASE IV. January 19, 1896. K. D. W., white, aged thirty-seven years, married.

Family History: Grandfather died of cancer.

Duration of Symptoms: Months.

Marital History: One child. No miscarriages.

Menstruation began at twelve years; flow normal in amount, regular; slight dysmenorrhea.

January 19, 1896. Hysterectomy, with removal of cuff of vaginal wall. On the right side the disease had extended to the pelvic wall.

Discharged January 22d. Died of sepsis.

CASE V. January 25, 1896. F. R., white, aged forty years, married.

Family History: Great-grandmother, grandfather, and mother died of cancer.

Duration of Symptoms: Two years.

Marital History: One child. One miscarriage.

Menstruation began at sixteen years; flow normal in amount, always irregular, lasting five days; no dysmenorrhea.

January 25th. Hysterectomy, with removal of cuff of vaginal wall.

Discharged. Died of shock.

CASE VI. March 12, 1896. N. B., white, aged thirty-eight years, married.

Family History: Negative.

Duration of Symptoms: Two years.

Marital History: Never pregnant.

Menstruation began at fourteen years; flow profuse, regular; no dysmenorrhea.

March 12, 1896. Hysterectomy. Pathologist found that the disease was confined to the cervix.

Discharged April 15th, well to all appearances.

October 12, 1896. This patient's physician writes that the disease returned in the vault of the vagina and now involves the bladder.

#### CARNEY HOSPITAL.

CASE I. September 30, 1895. S. E. F., white, aged fifty-three years, married.

Family History: Negative.

Duration of Symptoms: Five months.

Marital History: One child. No miscarriages.

Menstruation began at eleven years; flow moderate,

lasting three days, regular. Menopause eighteen months ago.

Operation September 30, 1895. Hysterectomy.

Discharged November 8th, well to all appearances. The pathologist reported that a margin of healthy tissue had been left outside of the disease.

May 16, 1896. The abdomen was reopened and neither by sight nor feeling could any return of the disease be made out.

#### A NEW METHOD FOR THE PREVENTION OF THUMB-SUCKING IN CHILDREN.

BY G. H. MONKS, M.D., BOSTON.

A GENTLEMAN recently asked me to devise some means by which his child, a little girl of about five years, could be cured of the habit of sucking her thumbs—a habit which had persisted for two years or more, in spite of all efforts to cure it. The ordinary methods, such as applying bitter substances to the thumbs, wrapping up the hands or thumbs, tying the arms to the sides, etc., had been tried without effect. The little girl was desirous of breaking herself of the habit; but apparently when she was tired or sleepy, she could not control herself, and one thumb or the other would go into her mouth. The teeth of the upper jaw were becoming somewhat prominent as the result of the habit. On thinking the matter over, it seemed to me that some method would have to be devised which would make it physically impossible for the child to get the thumb anywhere near the mouth.

I thought I could best accomplish this by immobilizing the elbows at a very obtuse angle; and I therefore applied a silicate of potash bandage to each arm, reaching nearly from shoulder to wrist. After the bandages had hardened, they were split at the sides, and removed. They were then carefully covered and lined with cotton flannel, the ends of the flannel being left long enough so as to project well beyond the upper and lower ends of the silicate bandages. The flannel was then stitched in such a manner that it would not shift its position. These two long tubular bandages could then, like gauntlets, be pulled on and off, as the parents wished.

In about two weeks, the father assured me that the experiment was so successful that the habit was completely broken, and that the child showed no further inclination to put its thumbs into its mouth. The immediate and complete success of the expedient seems to justify a publication of the case.

#### CASE OF SARCOMA OF THE NECK TREATED BY THE COLEY ANTITOXIN.<sup>1</sup>

REPORTED BY HOBART E. WARREN, M.D.

MR. S., forty-five years old, married, entered St. Margaret's Hospital on June 5, 1896, for operation. History of slowly growing tumor in the submaxillary region. On entrance firm, adherent mass in right sterno-mastoid and submaxillary regions. General condition fair.

June 6th. Operated on by Dr. J. C. Warren, and greater part of mass removed. Submastoid regions could not be satisfactorily cleaned out. Wound closed. Healed by first intention, except opening maintained for drainage of lymph.

<sup>1</sup> Read before the Suffolk District Medical Society, November 14, 1896.



A microscopic examination was made by Dr. Whitney. Diagnosis: small, round-celled sarcoma.

June 22d. General condition fair, but apparent return of growth in mastoid region, slight swelling in the neck; head inclined toward left shoulder; trachea pushed somewhat to left of median line; severe neuralgic pains in right side of head; swelling firm and adherent. To return home. Treatment with Coley antitoxin.

June 24th. Temperature and pulse normal. Measurement of right half of neck, transversely below chin, eight inches; left half, seven and one-half inches. Given hypodermic of antitoxin (two minims) in right deltoid region. Slight local redness and induration; no constitutional reaction.

June 30th. Drainage sinus entirely healed. Pains in head relieved by bromide. Swelling firmer. Glands to be felt in supraclavicular region. Slight cough. Given three minims of antitoxin as before. No reaction.

July 2d. Four minims. No reaction.

July 3d. Temperature normal. Given five minims at 4.40 P. M. At 9 P. M. nausea, chilliness, temperature 101°.

July 6th. Condition good. Coughs less. Swelling in neck measures one-quarter of an inch less. Given seven minims, as before. No reaction except local.

July 9th. Seemed prostrated after last injection. Better to-day. Given eight minims. No reaction.

July 11th. Condition excellent. Supraclavicular nodules are smaller. Given ten minims at 11.30 A. M. At 6 P. M. severe vomiting for one quarter of an hour. Temperature 99°.

July 12th. Very weak.

July 13th. Still exhausted. Swelling measures one-half inch less. Two halves of neck equal. Firm mass in sulcus between mastoid and angle of jaw persists. Given twelve minims. No reaction.

July 15th. Much prostrated.

July 17th. Much better. Given thirteen minims at 4.25 P. M. At 9 P. M. very hot, headache; temperature 99.5°.

July 18th. Prostration.

July 20th. Pain in head wearing off. Pain in neck. Given fifteen minims at 4.55 P. M. In afternoon, vomiting, head-ache. Temperature 100.5°.

July 22d. Prostration. No change in swelling.

July 24th. All injection thus far in right shoulder. Given to-day sixteen minims in right side of neck, near tumor, at 12 M. At 4.30 P. M., chill lasting one and one-half hours; headache, at 9 P. M. vomiting for three-quarters of an hour; temperature 103.8°.

July 26th. Very much prostrated. Anorexia. Herpes of lips and nose. Submastoid swelling less. Lobe of ear less elevated. Can hold head more erect. Has less pain; no cough.

July 31st. Condition good. Given three minims from fresh bottle of antitoxin in right side of neck. No reaction.

August 24th. Since July 31st his general weak condition has contraindicated any injections. Given to-day four minims in neck. No reaction. No tendency of swelling to increase.

August 24th to September 18th. Given increasing doses in neck, without reaction or change in condition.

September 18th. Given twelve minims in swelling between mastoid and jaw, which seems red and swollen since last injection. Injection at 4 P. M. At 4.45

P. M., headache, chill lasting one hour, and vomiting; temperature 102.5°.

September 21st. Very much prostrated. Herpes as before and also on chest. Continual nausea and vomiting. Swelling and redness entirely gone. Slight thickening about mastoid. Few small supraclavicular nodules. Head erect. No pain.

September 28th. Has regained strength. Condition of neck excellent. Complains simply of sticky feeling in entire right side of cheek. Nervous condition poor. Tendency to melancholia. All treatment stopped. Advised to return to business.

November 12th. No return of swelling. Attends to business affairs daily. Appetite good; strong; nervous condition still poor. Still complains of "sticky" feeling.

#### SUMMARY.

- (1) Temperature before all injections normal.
- (2) In bed at time of injection.
- (3) Up and about, except after last injection.
- (4) Injections into tumor itself by far the most effectual.
- (5) Number of injections, 19; all given in right shoulder and neck, deeply.

NOTE.—December 19th. General condition most excellent. Injections resumed as supraclavicular nodules have persisted and patient has some pain due to pressure of deep induration on the facial nerve. No marked swelling in neck.

## Reports of Societies.

### SUFFOLK DISTRICT MEDICAL SOCIETY.

JOHN DANE, M.D., SECRETARY.

STATED Meeting, November 14, 1896.

DR. J. C. WARREN read a paper on

#### THE MODERN TREATMENT OF MALIGNANT DISEASE.<sup>1</sup>

DR. GAY: I am in the habit of saying to the young gentlemen at the hospital, that there is no such thing as a sprain of the wrist, nor a contusion of the hip. Now these are extreme statements, and, like all extreme statements, are not quite true. The lesson intended to be conveyed to the students is, that every injury of the wrist had better be regarded as a Colles' fracture, unless they are certain of its being something else; and that every injury to the hip, especially if the person cannot walk, is a fracture of the neck of the femur, until it is proven beyond a reasonable doubt to be something different. Were these maxims adopted by physicians during the earlier part of their professional life, we should see fewer cases of unrecognized broken hips, and of "sprains" of the wrist, having a deformity characteristic of Colles' fracture.

A like assertion might well be made in regard to the nature of many small, young tumors, especially of the female breast. They are malignant, until properly investigated and found to be benign.

By adopting this rule more of these lumps would be removed at the only time when it is possible to effect a permanent cure of malignant affections, if there be such a period in their growth.

The question is, can malignant growths be detected early enough to be removed before the lymphatics have become involved beyond the surgeon's reach? Unless that can be done, we need not expect a large

<sup>1</sup> See page 665 of the Journal.

percentage of permanent cures from operations or from anything else. This is a difficult matter to decide, from the fact, that so few patients come to our notice sufficiently early. And, furthermore, some of us are too prone to advise these patients to wait, until the growth shall present diagnostic features of more or less distinctness, thereby losing the golden moment for interference.

A word as to what constitutes a "cure" of malignant disease. Volkmann, so often quoted, stated that if a woman with cancer of the breast remained free from disease at the end of one year after its removal, a cure might be hoped for; if she remained well at the end of two years, a cure could be expected, and if free from disease at the end of three years, a cure was almost certain to be effected. We all know that this is not true here.

Twelve years ago last March, I removed the tongue and anterior portion of the lower jaw for malignant disease. There was no return for ten years. He now has a large mass of cancerous glands upon both sides of the neck. In my opinion, he was never cured, although he had no outward evidence of the disease for ten years after the last operation. If a person, having been operated upon for malignant disease, lives many years and dies from something else, it is fair to say that he was cured of the original malady. But should it ever return, however late in life, I question if a permanent cure in the sense that we speak of cure of fatty tumors, for instance, can be claimed.

There is one other point in connection with malignant disease, which does not receive quite the attention from surgeons that its importance demands, and that is the after-treatment. Too many operators think that the patient, having recovered from the operation, there is nothing more to be done, until the disease again makes its appearance. While the speaker is not, and from the nature of the thing, cannot be positively certain that drugs do any real good in delaying or preventing a recurrence of malignant disease, yet he has seen enough benefit attending their persistent and prolonged use during the past fifteen years to justify their continuance and to recommend them to others. I prescribe the compound tincture of iodine in doses of two to five drops three times a day after food. Dr. J. S. Wight, of Brooklyn, gives the bromide of arsenic in doses of one-fortieth to one-tenth of a grain three times a day in breast cases, and thinks that he has seen positive benefit derived from its prolonged use. Those patients should never be lost sight of, but should be seen at intervals of a few months, or at once, should any suspicious change take place in the scar or vicinity. In this way will the patient's mind be occupied in a rational way, his hope will be stimulated, and if fortunate, he will be kept out of the clutches of the swindlers, who are always lying in wait for these victims of malignant disease.

Early and thorough operations, intelligent dissections with a view to tracing infected lymphatics, so admirably illustrated by Dr. Warren this evening, persistent and prolonged after-treatment constitute the groundwork of the modern method of dealing with malignant affections, although the results are hitherto far from satisfactory; yet it would seem likely, that it is along these lines we must expect any great improvement in permanently eradicating the disease.

DR. F. W. JOHNSON then read a paper on

#### TREATMENT OF CANCER OF THE UTERUS.<sup>1</sup>

DR. P. THORNDIKE: Just a word about malignant disease as it affects the urinary tract. It is undoubtedly true that carcinoma of the kidney is rarely diagnosed before it has become inoperable as far as any radical operation is concerned. This is true to a less extent of sarcoma of the kidney and it is true to an almost equal extent of carcinoma of the bladder, although there are forms of carcinoma of the bladder where the disease does not seem to spread rapidly and where it may even ulcerate and still remain a localized nodule on the bladder wall. The point I wanted to make in reference to cancers in operable regions is that it is not proper that we should be deterred from performing such operations because of the existing statistics which are at our disposal. Gross's statistics for cancer of the kidney show 70 per cent. mortality; statistics collected last year in much larger numbers show that up to 1890 the mortality was almost as great as Gross's, 50 per cent. to 60 per cent., while since 1890 the mortality had been between 20 per cent. and 25 per cent., so that granting that the indication for such operations is an exceptional one, we should not be deterred from operating on the occasional suitable case by this mass of old statistics which are practically the only ones at our disposal at present.

Sarcoma of the bladder is very rare indeed, and I have no statistics to offer in that connection. As for malignant disease of the penis and of the testicle, which are the other two places where this disease is at all common, it is fair to treat the localized nodule which appears on the foreskin as such similar nodules are treated on the face, in other words, by a simple dissection carefully made. The disease having once entered the body of the penis it seems inevitable that if any operation at all is to be performed the most radical of all must be done, namely, the splitting of the scrotum, the removal of the entire organ and the dissection of the glands in both groins. I saw to-day a report of such a case where that operation was performed, and there has been immunity for a period extending rather more than eight years. As for the testicular tumors it is becoming a well-known fact, I think, that many of the so-called benign tumors of the testicle take on a sarcomatous character later on, and I believe that if these cases of tumor of the testicle come to be investigated more carefully, even at the expense of early exploratory operations, that our statistics as to periods of immunity from recurrence following operation for malignant disease are going to be much more favorable. It seems a pity that malignant disease in a situation so favorable for removal should be neglected because of a too great confidence in our ability to make a discriminating diagnosis.

DR. WARREN: In regard to percentage of cures, I have just published some statistics concerning the breast, and have taken all classes of cases that came to the hospital, of all degrees of malignancy without making any particular selection. I have undertaken to operate on all cases which were capable of being mechanically removed as far as the naked eye could see, and I have obtained in a series of 62 consecutive cases about 27 per cent. of cures, that is, cases that have gone over three years without recurrence. I have seen one or two examples of recurrence after long periods, such as Dr. Gay refers to. In one pa-

<sup>1</sup> See page 671 of the Journal.

tient I removed, two years ago, a nodule from the breast operated upon seven years before for cancer, and I regard that as a case of a new infection of the paramammary glandular structure, that is, primary disease in the glandular structure which is independent of the mammary gland.

In regard to the post-operative treatment of cancer, I believe in the post-operative treatment of most surgical diseases. I think the surgeon should not be satisfied with the position, that an operation is a panacea; it should be merely an aid to further treatment, and therefore I think we ought to experiment as much as possible in the post-operative treatment of malignant disease. I have tried the bromide of arsenic; I have also used the solution known as Roswell Park's solution, arsenic and mercury and gold (prepared by Metcalf). From ten to twenty-five drops, three times a day, given a year or two, is supposed to have a deterrent effect on the recurrence of the disease. Coley has obtained a toxin for the treatment of cancer. A number of drugs are used for that purpose, but thus far no satisfactory results have been obtained. The latest one which I am using now, in connection with Dr. E. S. Wood, is an article known as "thiosinamine," composed of oil of black mustard (two parts), absolute alcohol (one part), aqua ammonia (seven parts).

An alcoholic solution of this is used, and about one-half to two grains twice a week is given for several months, as recommended by Dr. Sinclair Tousey. The injection for cancer of the breast is made behind the scapula. It is said to be beneficial for lupus, keloid and inoperable cancer. A careful inquiry in other cities as to other drugs has brought out a few satisfactory results. Dr. Park uses a 1 to 500 solution of pioctanin injected into the tumor. He thinks he has delayed the growth by this treatment. Serum-therapy has been used, but careful inquiries fail to bring out any satisfactory results from any form of treatment.

DR. C. F. WASHINGTON read a paper on

#### SERUM-THERAPY.<sup>3</sup>

DR. MCCOLLOM: The subject of the treatment of diphtheria by antitoxin is a comparatively recent one, but it is one that has been very thoroughly discussed, and has received a great deal of attention, not only from the profession in this country, but also from the profession abroad. The use of the anti-diphtheritic serum is the result of direct laboratory work. Guinea-pigs were inoculated with cultures of the bacillus of diphtheria, and it was found that the diphtheritic membrane did not appear if they were injected with the serum of an animal rendered immune to diphtheria. In certain other cases after the appearance of the membrane, injections of antitoxin caused the membrane to roll up at the edges and to rapidly disappear. Control experiments made at the same time without the use of antitoxin resulted in the death of the guinea-pigs in from twenty-four to forty-eight hours. After this work had been carefully conducted for about one year, patients suffering from diphtheria were inoculated with anti-diphtheritic serum, and the clinical results were similar to those obtained in the laboratory. The profession at about that time were very much interested in tuberculin. The fall of tuberculin as a remedial agent led many to think that a similar result would occur in the use of antitoxin. There is this

difference: tuberculin is the agent derived from the culture of the tubercle bacillus; antitoxin is the serum of an animal that has been rendered immune to diphtheria. The toxin of diphtheria is not found in the anti-diphtheritic serum. The horse has been selected for the production of antitoxin simply from the fact that a large quantity of serum can be obtained from this animal.

From the 1st of September, 1895, to October 1, 1896, at the South Department of the Boston City Hospital, there have been 1,972 cases of diphtheria treated with antitoxin. I do not mean simply mild cases that would get well without treatment; I do not mean slight attacks of sore throat in which there were positive cultures; but I do mean clinical cases of diphtheria in which there was a considerable amount of membrane, and the cultures showed the presence of the bacillus of this disease. Of these 1,972 cases, 1,706 were discharged well; 266 died, giving a percentage of mortality of 13. In the old wards of the Boston City Hospital, from 1891 to 1894, when antitoxin was not used, there were 1,062 cases treated, with 493 deaths, giving a percentage of 46. It would seem that this diminution in the death-rate must be due in a great measure to the use of antitoxin. Of these 1,972 cases, 70 died within twenty-four hours of admission, a certain number of these within two or three hours, and a part within twelve hours of admission. If these 70 moribund cases are eliminated, the percentage of mortality is found to be about 10.

A great deal has been said about the injurious effects of antitoxin. It has been claimed that it causes albuminuria. Of some 142 patients, the urine of whom was examined before and after the use of antitoxin, it was found that in 76 albumin was absent during the whole course of the disease. In 32 cases the amount of albumin was the same. In 19 cases albumin was diminished, and in 15 it was slightly increased, but never to such an extent as to give cause for anxiety. Much has been said about the eruptions that follow the administration of antitoxin. While it is perfectly true that various eruptions are caused by the use of antitoxin, these eruptions are not serious complications. About 120 of the 1,972 cases had post-antitoxin eruptions. There is another complication that is perhaps a greater source of annoyance than these eruptions. I allude to joint pains which simulate rheumatism, and may continue from twenty-four to forty-eight hours.

Perhaps one of the most striking beneficial effects of antitoxin is in the laryngeal cases of diphtheria, in which intubation seems imperative. After twelve hours, in certain cases, the breathing becomes easy and regular, and the case proceeds uninterruptedly to a cure. The progress of cases that come to intubation is rendered much more satisfactory by the use of antitoxin. A report of 150 cases compiled by F. E. Waxham, of Chicago, before the days of antitoxin, gives the percentage of mortality as 72+. In 100 cases reported at about the same time by O'Dwyer, of New York, the percentage of mortality is 73. In the Boston City Hospital, for the year ending January 31, 1895, the percentage of the mortality of intubation was 83. In the South Department, for the year ending October 31, 1896, there have been 200 intubations, with a death-rate of 53 per cent. It must be borne in mind that many of these cases were moribund at the time of entrance. Such a marked diminution

<sup>3</sup> See page 667 of the Journal.

in the death-rate can only be explained by the use of antitoxin.

The action of antitoxin in favorable cases is quite characteristic. At the end of twenty-four hours after the injection, the membrane commences to roll up at the edges. At the end of forty-eight hours it is completely detached. In specially severe cases it is sometimes necessary to give two or three doses at intervals of twenty-four hours. Alcoholic stimulation is a very important factor in the treatment of cases of diphtheria. It is not sufficient to give antitoxin and do nothing else. The patient must be stimulated and nourished in every possible way.

A good deal has been said regarding the situation for the injection. I have tried the thigh, abdomen, lumbar region and thorax. I have come to the conclusion that the upper part of the thorax near the posterior axillary line is the best place.

The dose of antitoxin has not been absolutely settled, but there is no evidence that a large dose gives rise to any trouble. The different preparations vary so much in strength that it is impossible to lay down any definite rule regarding the quantity to be used; 2,000 units, which in one preparation may mean five cubic centimetres, and in another preparation ten cubic centimetres, should be given as an initial dose to an adult. In the case of children, a proportionately smaller dose should be given. The effect of antitoxin in diminishing the disagreeable odor in septic cases is very marked, so much so, that it cannot fail to attract the attention of any one who treated diphtheria before the discovery of this agent. It seems to me that any one who treated diphtheria before the days of antitoxin can have only one opinion regarding its efficacy.

DR. V. Y. BOWDITCH: My remarks to-night will be confined to my experience in the use of tuberculin and antiphthisin, remedies with which I have had only limited experience to be sure, but in the use of which I believe the conditions recommended have been faithfully carried out.

In previous times I have alluded to my experience with tuberculin at the Carney Hospital at the time when the excitement over Koch's lymph was at its height. One of these cases was tubercular disease of the skin on the hand; the others (only two) cases of more or less advanced phthisis. In all of those, as far as any remedial effect was concerned, the results were negative; but although I saw nothing to indicate any deleterious effect from the remedy in my cases, the experience of others made me feel that I should wait for further news from Koch before trying it again.

I have not yet changed my mind even though impressed by the experience of those whose opinions I respect, and I keep in mind Virchow's allusions to the possibility of starting up fresh processes of miliary tubercle. Certainly tuberculin is not to be used except under the strictest supervision.

When Klebs proclaimed that in antiphthisin we had a remedy which could be used with perfect safety as it contained the virtues without the evil effects of tuberculin, I felt it could be used at the Sharon Sanitarium without fear.

The injections, according to directions, were given per rectum in doses beginning from one decigramme and increasing up to two and one-half grammes.

Seven patients received this treatment for periods varying from four or five weeks to four months. In all, greatly to my disappointment, were the results

negative. There was doubtless improvement in some but no more than had been frequently noticed by different methods. In one case in which one lung had been affected for several months and in which there had been very marked improvement, a sudden violent process appeared in the other lung after a month's use of antiphthisin and the patient has since then gone slowly and steadily down hill. It may have been simply coincidence and I think it probably was, but I cannot help wondering if it would have happened had the remedy not been used. I have used it also for three months at the City Hospital in a case of phthisis not far advanced and doubtless there was improvement in the physical signs and the cough, but again no more than I have often seen after rest and good nursing. The temperature, usually high, was not affected apparently by the remedy.

In spite of present disappointment, however, I can but feel, as Dr. Withington has said, the strongest hope that in the not distant future, results in tubercular disease may be similar to those already attained in the treatment of diphtheria.

DR. WITHINGTON: I wish to remind the gentlemen that the use of tuberculin and antiphthisin has nothing to do with serum-therapy. They are neither of them connected with serum. One other point, a very practical one, is the use of injections of antitoxin in cases of presumed diphtheria when the cases first come under observation. The value of the treatment is so largely dependent upon the early stage at which it is used that no time should be lost; and if the case is one of undoubted diphtheria we all, I think, who have had much experience with antitoxin would say it should be given at once. The question then comes as to what shall be done in doubtful cases, cases where we see a throat which looks suspicious, where we have got to wait twenty-four hours for the bacteriologist to make the diagnosis for us. In children where we have reason to think an exposure has occurred, as, for instance in those attending public schools, it seems to me it is the part of wisdom not to wait for the bacteriological examination but to make an injection of antitoxin and if it turns out that the patient did not have the disease no particular harm is done. On the other hand, if twenty-four to forty-eight hours are lost, it cannot be made up. It is proper under those circumstances to give the patient the benefit of the doubt.

DR. C. W. TOWNSEND exhibited a

BED BATH-TUB.

A description of this tub has already been published by Dr. Townsend in the issue of the JOURNAL for November 19, 1896.

THE AMERICAN MEDICO-SURGICAL BULLETIN, beginning with the new year, will be issued as a semi-monthly, with Dr. R. G. Eccles, of Brooklyn, in editorial charge. The annual subscription has been reduced from four dollars to one dollar, and the policy of the publication will be radically changed. It would appear that the "brilliant editorials, straight from the shoulder, written without fear or favor," and the greatly extolled "campaign against medical humbugs of every kind" in which other journals were invited to follow the *Bulletin's* lead to a glorious medical Arcadia, have not been attended by the scintillating success that the projectors anticipated. — *Medical News*.

## MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

TWENTY-SECOND ANNUAL MEETING, ST. PAUL, MINN.,  
SEPTEMBER 15-18, 1896.

(Concluded from No. 28, p. 657.)

DR. HUGH T. PATRICK, Chicago, read a paper on  
ELECTRO-DIAGNOSIS AND ELECTRO-THERAPEUTICS  
SIMPLIFIED.

DR. J. FRANK, Chicago, read a paper on  
A NEW METHOD OF FASTENING THE ROUND LIGAMENTS  
IN ALEXANDER'S OPERATION, WITH LITTLE DIS-  
TURBANCE TO THEIR ANATOMICAL RELATIONS.

An incision an inch long is made midway between the anterior superior spine of the ilium and the spine of the pubes, a trifle above Poupart's ligament. The transversalis muscle is pushed back and the ligament lifted out with a blunt hook, such as I here show you. Draw it out until the uterus is in the correct position. No great difference is experienced if the peritoneal cavity should be opened. Usually three sutures are required to close the wound, the first one being taken as low as possible through one flap of the peritoneum, then through the round ligament itself. Instead of drawing the ligament through the fascia as formerly practised, it is replaced in its anatomical position beneath the transversalis muscle. By this method a slough of the ligament is prevented. This operation is the simplest of all yet proposed for the purpose. As a suture material kangaroo tendon has proven most satisfactory in my experience. A pessary should be fitted in before the operation, and worn as long as may be deemed necessary by the surgeon, afterwards.

DR. A. J. OCHSNER, Chicago: Dr. Frank devised this method seven years ago. I consider it a great improvement in this operation because it does away with tearing and injuring the tissues. His method leaves the organ in the best possible condition for recovery, with sufficient adhesions to protect the ligament from being drawn out again; yet without unnecessary adhesions. I have examined some of the author's cases and can confirm his favorable report.

DR. J. HOMER COULTER, Chicago, read a paper on  
TONSILLOTOMY BY CAUTERY DISSECTION.

With a well-heated small electrode the pillars are dissected away from the tonsil to one-half its extent. The gland is then, with suitable forceps, drawn well out and thoroughly and entirely dissected out to about one-half its extent. This portion is then cut off and the surface treated with a strong solution of silver nitrate. In a week or ten days the other portion of the tonsil is removed in the same manner. This operation will give cosmetic as well as practical results unobtainable by any other process yet suggested.

DR. H. W. LOEB, St. Louis: This method of dissection is one that must commend itself in a great number of cases as being the very best possible. I most heartily agree with the author that removal of the whole tonsil is an absolute requisite if you wish to cure your patient. As to the voice changes suggested by some, I believe ablation of the tonsil does have a decided effect on the voice register, but I also believe it is always in the way of improvement. I also desire to state my disbelief in the uric-acid diathesis having anything to do with tonsillitis, further than as a concomitant condition. I shall certainly provide

myself with the special instruments used by Dr. Coulter and further investigate the operation. When in Chicago I have the opportunity of seeing some of these cases, and I must say for cosmetic results I have never seen the equal.

## THE SURGICAL TREATMENT OF PYLORIC OBSTRUCTIONS

was the title of a paper read by DR. W. J. MAYO, of Rochester, Minn.

DR. THOMAS H. MANLEY, of New York, read a paper on

## CONDITIONS WHICH MAY SIMULATE ORGANIC OBSTRUCTION OF THE RECTUM.

DR. I. N. LOVE: In discussing the paper of Dr. Manley I would say there can be no question that the majority of the diseases which afflict human beings, male or female, are largely dependent upon constipation, and consequently upon obstruction of the rectum. We are all of the opinion that a large part of the diseases of women are due to that factor. Their habits of life, their social, domestic and maternal duties, seriously interfere with the regularity which is so essential. Every individual should be anxious to properly cleanse the sewerage system of the body. The pelvis of a woman should be left to be occupied by the proper pelvic organs. A fecal accumulation is a mechanical obstruction pressing these organs out of position. I am thoroughly in sympathy with the position taken by Dr. Manley; and we as physicians should impress the mothers and the young ladies in their homes, that it is not only unsafe, but unesthetic and inartistic to retain these accumulations that should have a place in the sewers of the city. They should be made to realize that the alimentary canal is a food track in its entirety, and that waste material should be removed from the bowels. There should be no necessity for cathartics or purgatives. Happy living, right living, successful living, depends quite as much on proper elimination as anything else.

DR. NORVAL H. PIERCE, of Chicago, read a paper on

## SUBMUCOUS LINEAR CAUTERIZATION, A NEW METHOD FOR REDUCTION OF HYPERTROPHIES OF THE CONCHÆ.

The author called attention to the various methods ordinarily used for reduction of such hypertrophies, and showed the disadvantages of each. The differentiation between hypertrophy and turgescence was pointed out. The operation proposed by the author was as follows: A small incision is made in the hypertrophied membrane, then with a blunt flat probe the mucous membrane is carefully separated from the erectile tissue underneath. Then a sound, the end of which is cup-shaped, and upon which has been fused a few crystals of chromic acid, is inserted in the incision, and the track already made by the probe is thus cauterized. The advantages of this method are that there is no hemorrhage. It is less painful than by any other method. The functional activity of the mucous membrane is not in the least impaired. Patients will submit to this operation more willingly than to the burning of the cauter. The method is the most simple of any yet suggested. The reaction is usually insignificant. There is no slough. The danger of atresia is obviated.

DR. HORACE H. GRANT, Louisville, delivered the Address of Welcome. He selected for his subject  
THE RELATIONSHIP OF DIAGNOSIS TO THE FUTURE  
SURGICAL PROGRESS.

Some common ground must be chosen on which we can equalize our differences. Many of the most recent operations are already passing away under the effect of our modern scrutinizing investigation. We forget there are men in the quiet of their laboratories doing a work which makes all our wonderful progress possible, and gives us these new methods. We cannot progress much farther in technique or operative skill. Any great amount of paraphernalia suggests a lack of personal resource in the operator. Almost every part and organ of the human body has been removed, recently, with more or less good to the patient. If we would make earlier and more careful diagnosis many of the possible failures would be precluded. No surgeon dare say to his patient, "If I had known yesterday or before, thus or so, the result would have been different." Are we not at fault sometimes ourselves? Rarely will we fail to secure an operation if the operator be certain of his diagnosis and demands the operation.

No term in all surgery is so often misapplied as conservatism. No aim is dearer to the surgeon than the ways and means of relieving his patient. We must not fall into the error of making one man great and another insignificant. The experience which age gives some men leads them to make valuable and correct diagnosis. Experience is and should be one of the greatest aids in diagnosis.

The skiagraph has lately come into importance in surgical work, and it may be made an excellent adjunct in many instances. Its recent successes are noteworthy. It is yet, however, in its infancy, and doubtless is capable of still more development. May we not soon expect to see the fetus *in utero*? No one doorway can open to the royal road to success in the practice of surgery. The skilful and intelligent application of prompt relief, added to a careful diagnosis, will give us the most wonderful and satisfactory results.

DR. JAS. H. DUNN, Minneapolis, read a paper on  
APPENDICITIS; OR, TO OPERATE OR NOT TO OPERATE.

If we could but foretell which of our cases were going to be fatal, we could much more easily and satisfactorily decide this question. The percentage of fatality is yet too high. Yet must we cease operating, because of such fact? A certain number of these cases will recover without surgical interference. Indeed there is so large a number of such that I believe we very often in our enthusiasm operate when it would have been much better to have left them alone, so far as the knife was concerned.

DR. J. B. MURPHY, Chicago: The surgeon is brought face to face with a condition which has a recognized mortality of about five to eight per cent. I think such a percentage is too high. We first have to contend with the presence of a suppuration. In 450 cases, I do not think there has been an entire absence of pus in one single instance. I am satisfied there are some cases which can be cured by medicine, but can they be differentiated? By medical treatment we have a mortality of 10 per cent. and if we have three per cent. by the knife, then we must operate to save the other seven per cent. I don't think every

case can be operated upon, but the conditions will show whether or not it is advisable.

The next paper was read by DR. GASTAV FUTTERER, of Chicago, on

#### PLEURITIC EFFUSIONS AND THEIR TREATMENT.

A bacteriological examination should be made in all cases; both with cover-glasses, with culture media and by injections of the effusion in animals. Distinguish between exudate and transudate by using the acetic-acid chemical test; and by the same process eliminate mucine. Many cases of pleurisy are of an uric-acid diathesis. These will yield readily to the treatment by the salicylates. I believe not more than 15 per cent. of pleuritic cases are rheumatic. The finding of pneumococci does not aggravate the conditions, and often gives no markedly distinct symptoms. Pleurisy in typhoid is not a mixed infection, but a distinct condition. Tubercle bacilli are often found in the pleuritic effusions. I believe it is not only possible but likely that the tubercle bacilli do penetrate through the alveolar septi, and enter the pleura without producing infections of the lungs. Tuberculosis may be differentiated by the agar culture. Hyperesthesia of different parts is frequently present.

DR. A. J. OCHSNER, Chicago, read a paper on  
NERVE SUTURES AND OTHER OPERATIONS FOR INJURIES TO THE NERVES OF THE UPPER EXTREMITY.

My own observations and a study of the literature lead me to a confirmation of the following conclusions:

- (1) Every severed nerve should be sutured even after years.
- (2) The earlier the operation is performed the better.
- (3) If neither sensation or motion is established within a year, the nerve should again be exposed, the cicatricial tissue removed and the end again sutured.
- (4) The end should be clean cut, and should contain neither crushed nor cicatricial tissue.
- (5) Tension must be avoided.
- (6) The wound must heal without suppuration to secure the best results.
- (7) Hemorrhage should be perfectly controlled to prevent intervening clot.
- (8) Carefully prepared catgut is the best suture material.
- (9) After suturing the ends either direct or "a distance" it is well to stitch a fold of fascia over the united nerve ends.
- (10) The extremity should be placed at rest.
- (11) The external incision should be ample.

DR. HENRY P. NEWMAN, Chicago, read a paper on

#### WOMAN AND HER DISEASES, VERSUS GYNECOLOGY.

We are coming to a period of transition in the practice of surgical gynecology. Instead of essays on the treatment, we now have studies on the cure and prevention. Preventive medicine, hygiene, sanitation and sociology are now popular themes for medical societies. Philanthropy has taken the cue for medicine, and is attempting to form a citizen rather than reform him. I wish to emphasize the fact that we are not dealing with the cold-science side of our art but with the highest of humane interests. The amount of ignorance in the average woman of nature's requirements is appalling. Woman's sphere has lately wid-



ened until now it is wide as man's. Has she equipped herself for this race intelligently? Look at the average woman in the cities, the average stenographer, saleswoman, the business woman, do they not daily outrage their bodies by compliance with the dictates of fashion in food, dress and habits.

The tendency of gynecologists to enter surgery is to be deprecated. It narrows their opportunities. They had better stay attached to obstetrics and pediatrics. A woman's generative organs should not be doomed because she has needed to visit a gynecologist. A good diagnostician must know as much about woman as about disease; as much about environment and social and domestic relations as about pelvic lesions.

As specialists we must recognize and exercise the important interests in a medical science which will prevent rather than cure disease. As we know what can be acquired may be prevented, hence we as specialists should lead in the reform of those conditions which are detrimental to the health of woman.

#### THE PATHOLOGY AND TREATMENT OF SUPPURATIVE SALPINGITIS.

was the title of a paper read by DR. F. F. LAWRENCE.

DR. JAMES B. HERRICK, Chicago, read a paper

#### ON THE IMPORTANCE OF PHYSICAL SIGNS OTHER THAN MURMUR IN THE DIAGNOSIS OF VALVULAR DISEASE OF THE HEART.

Standard textbooks teach that an endocardial murmur is not always an evidence of a valvular lesion, and also that a valvular defect may exist and still no murmur be present. Practically, however, conclusions are usually based upon the presence or absence of murmur. This is wrong, for there may be a valvular disease without a distinct murmur being audible. Other findings than murmur must be used in determining the existence of a valvular lesion. Every valvular lesion must result in hypertrophy and dilatation of the heart behind the valve diseased. An increase in tension of the pulmonary circulation follows an valvular lesion at the mitral orifice, and later any aortic disease. This will show an increased force of the pulmonic second tone.

Error in calling an inorganic murmur, organic, is readily made, unless the secondary sounds are carefully sought for. The intention of the paper was not to undervalue the importance of endocardial murmur, but to insist that it is only by the complexus of signs and symptoms that an accurate diagnosis can be made. Of all the evidences of heart disease, the least valuable is the endocardial murmur.

DR. R. H. BABCOCK, Chicago, read a paper entitled

#### A REPORT OF A CASE ILLUSTRATING THE VALUE OF SECONDARY PHYSICAL SIGNS IN THE DIAGNOSIS OF CARDIAC DISEASES.

Among other points brought out were — murmurs are the least reliable signs of valvular disease. An accurate diagnosis cannot be made unless the secondary signs of valvular disease are recognized. If the heart actions are not sufficiently strong there may not be any murmur; or a grave defect may not be observed for the same reason. Secondary symptoms are a modified pulse rate, character and rhythm, leading to a congestion of the veins and internal organs.

In some instances there is also systolic venous pulsation of the liver. Such systolic jugular pulsation is diagnostic of insufficiency even if the murmur is not audible.

DR. I. N. LOVE, St. Louis, read a paper entitled  
WATER.

Hydropathy has been a wonderful service to humanity. We can appreciate the necessity of water when we remember that 75 per cent. of our body is made up of water. It is just as important as the solids in life's conditions. The demands for water are affected by the amount of muscular exercise, and degree of temperature to which the body is exposed. For an irritated stomach or bilious colic nothing is superior to liberal quantities of hot water. For "a night out" two or three cups of hot water along with a cup or two of hot coffee the next morning nothing is superior. It soothes the nervous system if you will abstain from food for a few hours.

We need water for nutrition, but also as well, and more important, for a proper elimination.

Copious draughts of water for its stimulating effect or the reduction of temperature have been used for many years. The hot pack in convulsions of children is often misused. Better begin with a tepid heat and add cold water gradually. Hot water locally in inflammatory conditions is most excellent.

DR. TURCK, Chicago. It seems to me the first indication is to find out what the pathological conditions are which you are trying to meet by water therapy. We must know the condition of the stomach, before advising the ingestion of large quantities of water. The habit of taking great quantities of water into the stomach, even two hours after a meal, will hinder the process of digestion. On the other hand, if there is an accumulation of material on the walls or other viscera, then the taking of water would not be objectionable.

DR. I. A. ABT, Chicago, read a paper,

#### THE CLINICAL SIGNIFICANCE OF THE CHILD'S FONTANELLE.

A paper was read by DR. EDOUARD BOECKMANN, St. Paul, by the title of

#### OPERATIVE TREATMENT OF PTERYGIUM,

He suggested an operation which was a combination of some others referred to. A crescentic piece is cut from the pterygium about five lines from its head. This part is curetted thoroughly down to the sclerotic. The head of the pterygium is dissected off. At the convexity of the piece cut out a stitch is inserted and the opposing edges drawn together. This leaves the curetted portion to granulate and form a cicatrix.

DR. WM. H. WILDER, Chicago, read a paper on  
SUBCONJUNCTIVAL INJECTION IN THE TREATMENT OF CERTAIN DISEASES OF THE EYE.

The method consists in the injection beneath the conjunctiva of minute quantities of bichloride of mercury or cyanide of mercury in solution. The operation is not especially painful unless there be inflammation present. It has been advocated for many other conditions and diseases. Its exact limitations and indications are not yet positively decided upon. It has been impossible to get the same good results from the salt injections, that one can obtain from the mercury. We have in this new treatment a powerful adjunct to the old and tried methods in some diseases of the eye.

DR. BOECKMANN: I have used these injections since I first commenced to practice medicine, but at



this time I am unable to say just how much good they really do.

DR. JAS. H. BUCKNER, Cincinnati, read a paper on  
RUPTURE OF THE CHOROID COAT.

The length of time which elapses from the date of the accident, and impairment of vision, is no criterion by which to judge of the amount of damage done to the choroid. The rarity of rupture of the choroid is due to the elasticity of the coats, together with the soft and elastic cushion of fat upon which the eyeball is supported.

DR. W. S. CALDWELL, Freeport, Ill., discussed

ETHER AND CHLOROFORM; THEIR COMPARATIVE MERITS AS AGENTS FOR THE PRODUCTION OF GENERAL ANESTHESIA.

The author gave an extended résumé of the statistics of death from chloroform and ether. He stated his preference for chloroform and his reasons therefor.

DR. C. B. PARKER, Cleveland, O., read a paper on

THE USE OF OXYGEN IN CHLOROFORM NARCOSIS.

DR. C. TRAVIS DRENNEN, Hot Springs, Ark., read a paper on

SYPHILIS AS AN ETIOLOGICAL FACTOR IN THE PRODUCTION OF TABES DORSALIS.

DR. W. F. BARCLAY, Pittsburgh, Pa., on

DISEASES OF THE NOSE AND THROAT IN CHILDREN.

The author dwelt particularly on the possible results of acute and chronic purulent and muco-purulent rhinitis in children, pointing out not only the necessity for more attention by the family physician, but demonstrating as well that almost, if not all, of the pathological conditions in the nose occurring in later life have their origin in this condition in childhood.

#### SURGICAL MELANGE,

was the title of a paper read by DR. J. MERRILL RICKETTS, Cincinnati.

Papers were also read by DR. FENTON B. TURCK, Chicago, on

FURTHER REPORT ON THE TREATMENT OF FIVE HUNDRED CASES OF GASTRITIS.

By DR. CASEY A. WOOD, Chicago, on

SOME RARE FORMS OF KERATITIS.

By DR. A. E. STEARNE, Indianapolis, on

THE SIGNIFICANCE AND OCCURRENCE OF CAPILLARY PULSATION IN NERVOUS DISEASES.

By DR. G. I. CULLEN, Cincinnati, on

THE NEWER REMEDIES IN OTOTOLOGY AND THEIR RESULTS.

The following officers were elected :

President — Dr. Thomas Hunt Stuckey, Louisville; First Vice-President — Dr. Chas. A. Wheaton, St. Paul; Second Vice-President — Dr. Paul Paquin, St. Louis; Secretary — Dr. H. W. Loeb, St. Louis; Treasurer — Dr. W. W. Wishard, Indianapolis; Member of Judicial Council — Dr. H. T. Patrick, Chicago.

The next place of meeting was appointed at Louisville, the third Tuesday in September, 1897.

Dr. H. Horace Grant was elected Chairman of the Committee of Arrangements.

## THE BOSTON

## Medical and Surgical Journal.

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## ANNUS MEDICUS MDCCCXCVI.

THE year 1896, while itself marked by substantial progress along many lines of medical research, will perhaps be remembered chiefly as the anniversary year of the end of the century. On May 14th occurred the centennial of Jenner's first successful arm-to-arm vaccination, and on October 16th, the semi-centennial of the beginning of perhaps the greatest epoch in surgical practice, the epoch of anesthesia. Had these two discoveries alone marked the century of medicine which ends with 1896, the benefits conferred by medical science upon mankind would have been incalculably great; but we have many more to add to these, two of which — in surgery, the antiseptic treatment of wounds, and in medicine the use of antitoxin-serum, especially in diphtheria — are hardly second even to these great discoveries in importance and value to mankind.

The notable celebration of the semi-centennial of anesthesia at the Massachusetts General Hospital in this city has been fully reported in our columns. Other commemorative meetings were held by medical societies during the year in various parts of the civilized world. Meetings in honor of Jenner and vaccination were noted in our issue of May 14th.

The position of the antitoxin treatment of diphtheria has not materially changed during the year, nor has any particular change been made by the year's experience in regard to our knowledge of the value of other antitoxins and serums. A larger experience has been gained with Widal's serum test in the diagnosis of typhoid fever, and it has become of practical value to physicians and boards of health.

Great activity in the application of the Röntgen rays to medicine and surgery has resulted in substantial progress.

By the death of Sir John Eric Erichsen, surgery in England and America has lost an important contributor to its progress and teaching, and one of the few whose active surgical experience extended to the pre-anesthetic period.

The year will always be memorable for the occurrence of the Armenian massacres in Turkey, and the prolongation of the bloody conflict between Spain and Cuba.

#### CHOLERA.

The history of cholera this year has been an interesting one, although different in many respects from that of 1895, particularly in respect to its routes of travel. At the close of 1895 the disease still continued in endemic form in the city and government of St. Petersburg, and in the governments of Volhynia, Podolia and Kieff. During the winter it gradually died out in the Russian provinces though it continued in St. Petersburg well into the spring. In Austria-Hungary there were only a few cases during the winter. The quarantine along the German frontier was, however, continued, although there was comparatively little danger of invasion from this direction.

The principal outbreak of cholera, however, and the one by which invasion of Europe, though successfully prevented, was for a long time threatened, was the widespread and long-continued epidemic which has prevailed through almost the entire year in Egypt. It is an interesting fact that this epidemic did not arise, as would have been expected, by extension along the regular routes of travel from India, by way of the Meccan pilgrimage, for there was this year no outbreak of the disease in its usual hotbed and distributing station, the Hedjaz. Stimulated, perhaps, by the severe lesson learned in the epidemic of 1895, that any relaxation of sanitary precautions was almost sure to be followed by an outbreak, the Superior Council of Health, composed of delegates from Egypt, Turkey, England and the Low Countries modified the sanitary measures to be taken in the case of the Meccan pilgrimage, in such a manner as markedly to increase their efficiency. The corps of sanitary physicians sent to Mecca was increased, and they were given the right of rigorous oversight over the food of the pilgrims, and the power to condemn anything prejudicial to health. Arrangements were made for thorough draining of the lodging-houses, and for clearing and watering the streets, under the supervision of the sanitary agents. Disinfection of pilgrims' clothes by steam was provided for at Mecca, and in the interim before the installation the stores and the clothing of patients who had died of contagious disease were destroyed by fire.

Other important towns in the Hedjaz were placed under special sanitary regulations, which were adapted to their particular needs — with regard to water-supply, arrangement of camps, barracks, etc. The usual quarantine arrangements for ports on the Red Sea were made and carried out, and, as has been noted above, so successfully that there was no outbreak in the Hedjaz during the year.

In spite of the success of these sanitary measures in 1896, one country at least has suffered severely during the whole year as a result of the epidemic of 1895. It will be remembered that in last year's account, the fact that an epidemic of cholera had

begun in the autumn at Damietta in Egypt was mentioned.

This outbreak, which began at Salhieh, a village north of the delta of the Nile, is believed to have been communicated to this village by pilgrims returning from Mecca, where cholera was then epidemic. In spite of vigorous sanitary measures which were at once begun by Rogers Pasha, the director-general of the sanitary service of Egypt, and his colleagues, the disease spread up the valley of the Nile; and in January, 1896, the first case appeared in Alexandria. Although for four months its extent was limited, in May, 1896, it had become epidemic in Cairo, and assumed a threatening phase. Late in May cases of cholera were found in Cairo, and its spread was rapid. The praiseworthy efforts of the sanitary authorities promptly reduced the mortality to but two or three cases a day in a city of over half a million people. The British army operating against the dervishes of Upper Egypt was not exempt from many victims of the cholera. The sanitary service, following and checking the disease wherever it appeared, noted that the epidemic was less virulent than those of 1865 and 1883, and that it expended its power chiefly upon the poorer classes, as is shown by the fact that among 6,860 tourists in Egypt during the last season, there was not a single case of cholera. A sanitary cordon was established upon the Peninsula of Sinai, where the baggage of returning pilgrims was disinfected; ten days' quarantine was enforced there and at El Tor.

The extent of the ravages of this epidemic may be judged by the fact that up to October 10, 1896, the mortality was 18,110. During the autumn, with the arrival of colder weather, the disease gradually died out, until, in December, it had almost entirely disappeared. The Turkish quarantine against Egypt was abolished in October.

The efficiency of the quarantine established against Egypt in Turkey, and the other Mediterranean countries, is shown by the fact that cholera was not communicated from Egypt to a single Mediterranean port during the year. Neither in Constantinople nor in the Turkish provinces did cholera appear except for a few sporadic cases during the early months of the year — the last dying sparks of the epidemic which raged so fiercely in 1895.

In India, however, where cholera has its perennial home, and where it exists as a constant menace to countries engaged in communication by trade or travel with the delta of the Ganges, the year 1896 has proved no exception to the general rule. In Bombay and Calcutta cholera has been constantly reported throughout the year, reaching its height during the spring months, and gradually decreasing during the summer. Between March 1st and April 25th there were 1,809 deaths from cholera registered in Calcutta.

In Japan, which, as our readers will remember, was devastated in the year 1895 by a severe epidemic of cholera brought from China by the returning army, and in which there was good reason to expect a recur-

rence of the epidemic this year, only a few isolated cases were reported, and of these the mortality was so low that many were considered of doubtful genuineness. The commendable vigilance and skill of the Japanese sanitary authorities received its merited reward.

As will be seen from the above brief report, the Western Continent was at no time during the year, in danger of invasion, and the Continent of Europe was not reached by cholera, even across the narrow Mediterranean. The fact that the epidemic in Egypt was confined to the lower classes, who constantly resisted the efforts of the sanitary authorities to stamp out the disease, and for the most part refused to take the simple precaution of boiling their drinking-water, was significant of the ease with which cholera can be controlled if by any chance it should gain a foothold in a civilized and intelligent community. The fact is significant, as stated above, that not a single case occurred this year among the large number of tourists who visited Egypt.

Late advices from Hong Kong (December 28th) state that cholera has broken out in that city, and quarantine regulations will be enforced in Japan against certain Chinese ports.

#### SMALL-POX.

During the year 1896, small-pox has not prevailed over any wide extent of territory in the United States, and has been well controlled by the sanitary authorities in the few instances in which it has gained any foothold whatever. The valleys of the Mississippi and Ohio Rivers, along the course of which it was carried chiefly by the negro deck-hands of the river steamers have at no time during the year been free from the disease. At the close of the year 1895, there were still a moderate number of small-pox cases in New Orleans, and Memphis and a fairly wide diffusion of the disease along the river ports of Arkansas. A sharp epidemic occurred near the head of navigation on the Ohio River, near Wheeling, W. Va.; and at Martin's Ferry, a port across the river, there were 140 cases and three deaths during December.

During January and February the disease continued to increase in New Orleans, and in March began to spread rapidly. The levee and cross-tie camps near the different steamboat landings on the Mississippi and its tributaries became infected, thus making it practicable to convey persons sick with the disease from one port to another by river steamers, and, as cases were found occasionally among the deck passengers, some alarm was felt among health officials, notably those at Shreveport, who refused to allow boats from New Orleans to land at that port until satisfied that all hands on board had been vaccinated. Acting on the recommendation of the inspectors of the Marine-Hospital Service, the Steamboat Captains and Owners Exchange issued an order prohibiting the employment of roustabouts unless they furnished certificates of successful vaccination. During April extensive vaccination was carried out among the steamer crews, by special sanitary inspectors. The necessity

for this action is shown by the fact that between February 29th and April 25th there were 589 cases of small-pox in New Orleans, with 175 deaths. During the winter and early spring there were continual reports of small-pox in the country districts of Arkansas; there were also a large number of cases at Memphis, Tenn., and the adjacent country, and a considerable epidemic in Missouri along the Mississippi River.

During May a marked decline of the disease took place at New Orleans, and it was no longer found necessary to enforce vaccination among the crews of the river steamers. During the spring months also the disease declined in marked degree all along the Mississippi Valley.

Through the winter, a few cases were reported in Arizona, Tex., Cairo, Ill. and in Kentucky; and a number of scattered cases occurred throughout a widespread territory in Michigan. A few cases occurring in Ohio and Western Pennsylvania were traced to the arrival of persons bringing the infection from the epidemic at Martin's Ferry, O.

One of the severest outbreaks of small-pox in this country during the year occurred among the densely packed negro population of the city of Key West during June and July. From the geographical proximity and commercial relations of this city with Cuba, one would at once suspect transmission from that country, where, as is well known, the conditions due to the war on the island have led to extensive prevalence of both small-pox and yellow fever. A careful investigation, however, failed to reveal the source of the epidemic, which was for a time difficult to control, owing to the resistance of the ignorant population to isolation and vaccination. A camp hospital with tents was established by the Marine-Hospital Service, but attempts on the part of the Mayor and the sheriff to enforce their authority and compel the patients to be taken to the hospital almost resulted in a riot, and were temporarily abandoned by these officials; whereupon the State Commissioners of Health enforced a strict quarantine until the city authorities saw fit to avail themselves of the facilities for control of the disease provided by the State and Marine-Hospital Service. In the course of time, the people were brought to reason, and submitted to vaccination from house to house, which was carried on by the State officials, with the result that by the middle of August the disease was well under control, and by the end of the month the epidemic had been stamped out, and the hospital camp was broken up. The epidemic had been so restricted by the energetic work of the authorities that even in spite of the unfavorable conditions under which they worked, and the resistance of the ignorant population, there had been only 42 cases and eight deaths.

On the island of Cuba all conditions have contributed to the continuance and spread of small-pox. The constant arrival of large numbers of unacclimated troops, their crowding together in barracks, the massing of the country population in the large towns under the edicts of the captain-general, the destitution caused by the

war, have all united as causes of the constant prevalence both of small-pox and yellow fever. It is impossible to form any estimate of the total mortality of these diseases in the smaller cities throughout the island. In the Spanish military hospitals it has been very high. During July and August in the single city of Santiago there were 30 to 40 deaths per week from small-pox and an average of 900 to 1,000 cases. In the autumn the disease declined, coincidently with an increase in yellow fever. During the autumn small-pox increased in Havana, to such an extent that in one week there were 67 deaths.

In Rio de Janeiro, small-pox has, as usual, continued throughout the year, and there have been slight epidemics in Peru at Lima and Callao.

In Constantinople and the Turkish Provinces small-pox has been continually present throughout the year; and during the summer there was a severe epidemic at Diarbekir.

In England, London and the large cities of the provinces were unusually free from small-pox throughout the year. There are, of course, always a few cases under treatment in the metropolitan hospitals in London, but at no time was there an approach to an epidemic.

In Gloucester and the surrounding country in the west of England, however, there was a severe epidemic during the winter and spring, which although costing a large number of lives, certainly taught, in quarters where this was much needed, a salutary lesson on the value of vaccination. Gloucester had been a centre of the anti-vaccination movement and vaccination had been neglected for ten years. The mortality of the disease among the unvaccinated, especially the high infant mortality, aroused the authorities at last, but too late, to an appreciation of their folly, and to a zealous enforcement of the vaccination laws. By April 25th, there had been upwards of 1,300 cases in Gloucester alone; by which it will be seen that the epidemic was much severer than any which has occurred in our own country during the year. The mortality among the unvaccinated in this epidemic contrasted so badly with that of the vaccinated, as to convince the most sceptical of the value of Jenner's priceless discovery.

#### YELLOW FEVER.

As is well known, yellow fever is endemic in Rio de Janeiro, is continually present also among the sea-ports of the West Indies, and frequently gains a foothold in Mexican ports. The efficiency of our quarantine service has this year, as usual, prevented its gaining a foothold in our southern sea-ports, though the danger was increased even more than in 1895 by the extent of its spread in Cuba, owing to the extremely bad sanitary conditions of the island engendered by the war. These conditions have been this year even worse than last, as a continual stream of unacclimated troops has been added to the large force already present on the island, and, as mentioned above, owing both to the edicts of the captain-general and the

danger of pillage and murder by the troops if they stayed at home, the country population had flocked into the cities, where disease, filth and destitution have done their deadly work. It is notable that throughout the year, yellow fever, however, has not molested the native population to any extent, while its ravages among the Spanish soldiers have been fearful. Small-pox, on the other hand, has been much more fatal among the native population than among the troops.

During the hot weather of the summer months, while small-pox was declining, yellow fever increased in extent and severity; and in the autumn the small-pox again increased, until in October both diseases were at their height. In a single week in October there were 70 deaths from yellow fever in Havana, 63 of them being among the soldiers in the military hospitals.

In Rio de Janeiro, the height of the epidemic of yellow fever was reached in February and March, the summer months of that latitude. From February 8th to 29th there were 594 deaths from this cause, and from March 14th to 29th, 459 cases.

During the spring there was an epidemic at Puerto Rico, and in April a few cases occurred at Callao, Peru.

In October the disease gained a foothold at San Salvador.

At the Southern quarantine stations of this country the usual vigilance was maintained against the entrance of yellow fever or small-pox in vessels from Rio and Cuba, and a very large number of vessels were inspected and disinfected. So far as can be learned, only one case of yellow fever has landed on our shores this year, a second-cabin passenger on the steamship *Yucatan*, which arrived at New York on Monday, October 19th, from Havana. The patient was not ill on his arrival, but was detained at Hoffman Island because he had no acclimatization certificate from the United States sanitary inspector at Havana. At Hoffman Island he developed yellow fever, and died in three days. A more striking example of the practical value of quarantine system could hardly be cited.

Several vessels which had had yellow fever on board, either in Rio harbor or on the voyage north, arrived at our quarantine stations, but the case above reported was the only one which actually reached our shores.

In November yellow fever continued steadily to increase in Havana, and a severe epidemic broke out at Port au Prince, Hayti, where the mortality was very severe among the natives, and several officers of American vessels lying at that port lost their lives.

#### PLAGUE.

In January, 1896, the United States Consul at Canton, China, reported that a few cases of bubonic plague had appeared in that city, and also that the disease had been reported at Hong Kong; and in February it had spread to such an extent that an epidemic similar to that of 1894 was feared, and the United States Consul at Hong Kong refused to grant clean

bills of health to steamers leaving that port for the United States via Yokohama. In March a Chinese passenger from Hong Kong for the United States on the steamer *Gaelic* went ashore at Yokohama and died. He was buried by the Chinese, but the Japanese authorities, suspecting trouble, exhumed the body, and found the bacillus of plague. No other passengers coming down with the disease after a detention for a suitable time at Yokohama, the *Gaelic* was given a clean bill of health and allowed to proceed, the United States Marine-Hospital Service, of course, being informed of the circumstances.

In April the plague was scattered everywhere throughout Hong Kong and the adjoining districts; and Europeans, as well as Chinese, were numbered among its victims. About 60 cases a week came under the cognizance of the authorities, but no reliable account could be obtained of the number of cases that actually occurred. In Canton a similar state of things obtained. In April the Island of Hainan in the Straits Settlements was declared infected. In May the plague broke out in Foo Chow, and extended rapidly through the poorer quarters of the City. Its ravages continued during June, and the mortality was much greater than in the epidemic of 1895, it being estimated that in Hong Kong 95 per cent. of the cases were fatal. In Canton in June there were about 280 deaths a day. Through the hot summer weather the plague at Hong Kong and Canton gradually declined, though the disease still lingered there late into the autumn. All through the season all vessels leaving Hong Kong for the United States via Yokohama have been carefully inspected at both these ports, and, when suspicion of disease existed, have been held for disinfection. Quarantine and disinfection of luggage of Chinese passengers have been frequently practised at our Pacific quarantine station. No case of plague or small-pox has reached our shores from China or Japan.

The only portion of the Japanese Empire where plague gained a foothold was the island of Formosa; here there was a rather severe outbreak in the summer.

In September bubonic plague was reported in Bombay, and had already a good firm foothold, as several hundred persons had died of the disease. The question of its origin was interesting. Since no even probable source of infection by route of overland travel could be traced, it was thought that the disease must have been brought by sea, very probably from Hong Kong, from which port ships are constantly arriving in Bombay. The fact that plague is epidemic coincidentally among human beings and rats, which always die of it in large numbers, showed at least a possibility that the rats which infest the holds of ships might have brought it with them to Bombay. In October Professor Haffkine established the identity of the disease beyond doubt by finding the bacillus. Early in October plague appeared in Calcutta.

The question of the mode of origin of this epidemic is of interest from the fact that in previous epidemics the plague has spread slowly from its starting-point,

working its way outward very gradually. The fact that before the disease appeared in Bombay, the rats were noticed to be dying in large numbers, so that the children used to amuse themselves playing with the carcasses in the streets and throwing them at each other, suggests the possibility of transmission by sea.

The epidemic, both at Bombay and Calcutta, was regarded as a mild type of the disease, compared with the 95 per cent. mortality of Hong Kong and Canton, but the degree of mildness must have been extremely relative, when we consider the fact that up to October 31st, out of 504 cases of plague reported at Bombay, there had been 396 deaths. Efforts at restriction of the disease by sanitary measures were of little avail, owing to the ignorance and filth of the infected population.

In November the British Government appointed a commission, of which Professor Haffkine is a member, to investigate the disease, as to its nature, mode of origin, communicability, etc. It is to be hoped that their report will throw some light on the mode of origin of this and other epidemics.

During the autumn there has been a not inconsiderable epidemic in the Yensen, in Southern Arabia.

Late advices from Bombay (December 28th) state that plague is increasing, and that there have been 2,094 cases and 1,494 deaths. Martial law is threatened unless the natives obey sanitary regulations.

#### TYPHUS FEVER.

Typhus Fever has been reported throughout the year in Moscow and Warsaw in Russia, has been almost constantly present in Madrid, and has occurred in various sea-ports widely scattered over the globe. No cases have reached the United States.

During January and February there were a good many scattered cases at Liverpool, London and other English sea-ports, and a small epidemic occurred in Glasgow, Scotland. All the cases occurred in an overcrowded district, along the river and near the docks, a district which had a reputation for the association of overcrowding with typhus fever. The health authorities combated the disease chiefly by removing the sick to the hospital, declaring the worst of the houses untenable, and reducing the number of inmates in others. A large number of cases were, nevertheless, reported up to about the middle of April, when it was brought under control.

The worst epidemic of the year has recently occurred at the Austrian naval station of Pola. On December 17th 700 cases were reported in the Naval Hospital alone. The town was deserted by all who could leave it, and the death-rate was very high.

#### BERI-BERI.

Throughout nearly the whole year this disease has been endemic at the port of Rio de Janeiro, an average of five to twelve deaths per week being reported.

An isolated epidemic occurred during October and November at the Richmond Insane Asylum, Dublin, Ireland. Over 100 cases occurred, several of them

being members of the nursing staff. The disease was of a mild form, though heart symptoms were prominent, as in the epidemic of 1894.

#### INFLUENZA.

No pandemic of influenza has been reported this year. From Constantinople during the spring months constant reports were made of the prevalence of influenza, and other respiratory diseases. The long duration of time over which the cases occurred, and the absence of any period of especial severity, however, point against these cases belonging to the type of epidemic influenza.

#### THE SANITARY CONDITION OF TURKEY.

The crowning atrocity of the year 1896 has been, as all the world knows, the wholesale massacre of the Armenians in Constantinople and the Turkish provinces. Owing to the widespread suffering and destitution following upon the murder of the bread-winners, starvation and misery have prevailed throughout that stricken country, and to these evils have been added the ravages of disease. The sanitary reports from Constantinople and the provinces during the spring months were unvaryingly bad. Following the massacres in Marash and Zeitoun came influenza, small-pox, typhus and typhoid fevers, and dysentery. Epidemics and famine following massacre reduced the unfortunate population to a state of wretchedness beyond all description. The efforts of Miss Clara Barton and the American mission in relieving these unfortunates were productive of results which under the prevailing conditions were surprisingly good.

In Constantinople through the year almost all the infectious diseases except cholera, have claimed many victims, and the misery resulting from the massacres, has reduced that city to a sanitary condition, if possible, worse than the ordinary.

#### ANTITOXIN IN DIPHTHERIA.

The experience of the past year in regard to the antitoxin of diphtheria has justified the hopes to which early experience gave rise.

The most important contribution to the statistics of the subject was the exhaustive report of the American Pediatric Society's collective investigation on the use of antitoxin in private practice, published in the *Journal* of July 2d. Six hundred and fifteen physicians recorded their experience in 3,884 cases—and to these were added 942 and 1,468 cases treated at their homes by the New York and Chicago Boards of Health respectively, up to May 2d of this year, and the mortality of the whole was only 718, or 12.3 per cent. Brought out in the most striking manner by the report was the low mortality when the remedy was given early in that disease.

Taking only the cases injected within the first three days, the mortality is 7.3 per cent. of all cases. Omitting from these those dying within twenty-four hours of injection, the ratio is further reduced to 4.8 per cent., which more than substantiates Behring's claim of a reduction of diphtheria mortality to five per cent., if treated on the first or second day. The mortality of the 1,448 cases injected after the fourth day was only 27 per cent.

The result in the laryngeal cases was even more convincing of the value of antitoxin. In one-half of the cases no intubation was required, and of the 537 cases coming to operation only 25.9 per cent. died, a mortality less than half as great as ever reported by any other method of treatment.

The mortality in 4,837 cases confirmed by bacteriological examination was 11.4 per cent. and in 957 cases in which the clinical diagnosis only was made, 16.3 per cent.

The fact that these statistics were drawn from different and widely separated localities, and therefore under every possible variation as to local conditions, severity of the epidemic, etc., gives them a value much greater than that of statistics shown from single institutions, and effectually answers the argument that the favorable results of the use of antitoxin are due to especial mildness of the epidemic, inclusive of a large number of mild cases owing to report of Klebs-Löffler bacillus, special facilities for antiseptic treatment, etc.

Another confirmation of the value of antitoxin treatment during the year was the report of the London Metropolitan Asylums Board, which appeared in March, and which showed that the mortality from diphtheria in the hospitals of the board in 1895, when 62 per cent. of the cases received the antitoxin treatment was 22.5 per cent. against a mortality of 29.6 per cent. in 1894, when antitoxin was not used. The mortality in cases requiring tracheotomy fell from 70.4 per cent. in 1894 to 49.6 per cent. in 1895, a fall which could hardly be due to anything else than the antitoxin treatment. The severity of the disease in the two years being about equal, the superintendents of the hospitals agreed that the decrease in mortality must be ascribed to antitoxin.

The fact that the mortality percentage has been reduced in London to a less extent than in any other large city by the treatment naturally gives rise to the surmise that the quality of antitoxin furnished by the laboratories of the board is not up to the standard of that provided in other cities. The extreme liability to variation in the strength of this product, owing to the many variable elements which enter into its production, are too well known to need comment. The improvements in methods of administration which have been adopted in other countries have been slow to find place in England. At Guy's Hospital last summer, we are informed, this serum was injected by means of an aspirator.

Later information from London came in the paper read by Dr. Dixey before the Carlisle meeting of the British Medical Association last summer, in which on the basis of the case mortality for the first half of the year, he computed that the mortality for the entire year would fall below 20 per cent. The case mortality for the first half of the year, 20.2 per cent., was the lowest mortality ever recorded in London, and meant an annual saving of some hundreds of lives.

The experience of the year at the Boston City Hospital has fully sustained the good record previously made there by the antitoxin treatment. As stated by Dr. J. H. McCollom, in a paper read before the Massachusetts Medical Society in June, and published in the *JOURNAL* of August 13th, the average death-rate in that hospital up to September, 1895, was 43 per cent. Since that date, which marked the beginning of the era during which all the cases have received antitoxin treatment, the mortality has been 12.5 per

cent. The cases treated at the City Hospital were nearly all of them severe cases. We are informed that during the latter half of the year, the same low mortality-rate has been maintained. A smaller number of laryngeal cases now comes to operation, and the mortality of operative cases has decreased nearly one-half. The lesser operation of intubation has almost replaced tracheotomy, which is now very rarely performed. With regard to the correspondence between the clinical and bacteriological diagnosis of diphtheria, Dr. McCollom's words are significant: "Bacteriological examinations were made in every instance," and "the failure to obtain a positive result has occurred so seldom as not to be an element of the slightest value, having been due to some error in technique."

The mortality from diphtheria at the Hôpital des Enfants Malades in Paris during 1895, was 13.85 per cent. Roux antitoxin serum was employed in all cases.

From all quarters and under all conditions where the antitoxin treatment has been carried out, the reports issued during the year 1896 have fully sustained the claims made for it. There can be no doubt that thousands of lives have already been saved by this remedy, which may be justly termed the greatest contribution to the healing art made by modern scientific medicine.

A table published by Biggs and Guerard,<sup>1</sup> comparing the case mortality of diphtheria in New York, Berlin and Paris in 1895 and 1896 with that of recent years, shows that in New York the case mortality of diphtheria, which from 1880 to 1895 averaged about 35 per cent., has fallen in 1895 and 1896 to about 16 per cent.

The monthly mortality from diphtheria and croup in Paris from 1889 to September, 1894, when antitoxin came into general use, ran somewhere between 100 and 200 cases, the largest number of cases in any month being 219, and the smallest 58. Since antitoxin came into general use, the largest number of deaths in any month has been 73, and the smallest 14. The total number of deaths from diphtheria and croup in Paris in 1889 was 1,890; in 1893, 1,266; in 1894, 1,009, and in 1895, 440.

In Berlin the mortality from diphtheria and croup between 1889 and 1895 ran between 1,078, and 1,643 annually. In 1895, with antitoxin in general use, the mortality was 996, and for the first half of 1896 was 294.

The fact that antitoxin has begun to exert a marked influence upon the municipal death-rate from diphtheria in some of our large cities can hardly be gainsaid.

#### THE ANTITOXIN TREATMENT OF TETANUS.

Owing to the fact that the number of antitoxic units required to successfully combat the action of the tetanus toxin, increases so rapidly with the lapse of time after inoculation, and with the severity of the initial infection, it is hardly to be expected that the curative effects of antitoxin tetanus will bear comparison with that in diphtheria. The mortality in 44 cases of tetanus treated by antitoxin<sup>2</sup> has been 16 per cent. The mortality in acute tetanus, not so treated, has been estimated at 80 to 90 per cent., and in chronic tetanus, 50 per cent. Although we must admit the possibility of the modification of statistics by the fact that all cases which have resulted unfavorably have

probably not been reported, the mortality in the reported cases has been so low as to make it our duty, as Jackson says, to "give the patient the benefit of the doubt, and use the remedy." Even in cases where the treatment has begun late, and only after the disease had made extensive inroads, success has been attained.

#### SERO-THERAPY IN STREPTOCOCCUS INFECTION.

The evidence which has accumulated during 1896 cannot be said to be strongly in favor of the value of sero-therapy in streptococcus infection.

The discussion as to its value by the Obstetrical Society of France last April resulted in the main against the serum. Charpentier reported 40 cases from the practice of his colleagues, mortality, 42 per cent. Stimulating and general treatment was also given in all these cases. The general opinion was that the success was not brilliant, and that the serum was not found to be without ill effects. Against these results, we have besides Marmorek's large number of cases of erysipelas (413), in which he found improvement in general and local condition, and fall of temperature to result from the treatment.

The cases reported by other observers are too few to be of any value in forming an opinion. Roux and Baginsky, however, report that they have found the serum of distinct advantage in the complications (enlarged glands, etc.), following scarlet fever, and due to the streptococcus.

#### SERO-THERAPY IN TUBERCULOSIS.

The treatment of tuberculosis by Maragliano's method has been favorably reported on by Rienzi (of Naples), Bernheim, and Maragliano himself.<sup>3</sup> In this country, Worcester<sup>4</sup> has reported favorable results from antiphtisin and tuberculin, and Paul Paquin from the serum of immunized horses.

The loopholes for error are so great in tuberculosis, however, so many cases get well under general and tonic treatment, and so many improve under any treatment, only to grow worse again and die in the end, that a very convincing series of cases will be necessary to establish the value of any of the serums in tubercular diseases.

#### SERO-THERAPY IN OTHER DISEASES.

Legrain reports the treatment of typhus by the serum of patients convalescing from attacks at the prison at Bougie, with favorable results. There were 40 cases with 12 deaths without the serum, and 39 cases with two deaths with it. The number of cases is too small to form judgment of its value.

Cases of typhoid fever treated by the serum of convalescents have been too few to be of value.

#### HAFFKINE'S INOCULATIONS AGAINST CHOLERA.

Haffkine's inoculations against cholera have been pursued this year both by Haffkine himself, and by other observers, and a continuance of the favorable results of former years is reported.

#### THE RÖNTGEN RAYS IN MEDICINE.

Toward the close of 1895 the news was published in the daily press that Professor Röntgen of Würzburg had discovered a new kind of rays which would pass through the soft tissues of the body, but not through the bones, and would affect a photographic

<sup>1</sup> Medical News, December 19, 1896.

<sup>2</sup> Henry Jackson: Medical Communications, Massachusetts Medical Society, 1896, p. 218.

<sup>3</sup> Jackson: Loc. cit.

<sup>4</sup> Medical Communications; Massachusetts Medical Society, 1896.



plate, so that a photograph of the bones, showing their exact outline, could be taken through the tissues of the living body. Soon the evidence as to this astonishing discovery became so well established as to be beyond doubt, and physicians and medical men all over the world entered into the study of the new kind of radiation, the former seeking to find out the nature of the rays from a scientific standpoint, and the latter to perfect the methods of application to medicine and surgery, and ascertain their possible value in the study of medical and surgical disease. With the results of these investigations the reports published in the JOURNAL during the year have already made our readers familiar. A brief *résumé*, however, of the progress during the year in their surgical and medical application may be of interest.

Great activity has been displayed during the year in the modification of the Crookes tubes, that portion of the apparatus from which the rays are actually given off, in order to increase the intensity of the radiation, so as to shorten the time necessary for exposure of the object to the rays, and to increase the definition of the resulting skiagraphs. Much has been accomplished in this direction, and much also in the perfection in detail and definition of the skiagraphs. In fluorescence also, marked progress has been made in perfecting the detail of the instruments and their application. It has now become possible for the surgeon in his office or the hospital to examine fractures with the fluoreoscope, to correct deformity, and to check his results by the fluoreoscope or skiagraph.

The most easy and obvious application of the rays, and therefore the first, was the detection of foreign bodies in the tissues. In the early days, hundreds of foreign bodies were removed from the extremities; and naturally, for when the patients were assured by the radiography that the foreign bodies were there, they of course wanted them removed, thus furnishing gratification to the patient, and to the surgeon a case to report of the successful location of a foreign body by the x-rays, and its removal. As the process increased in definition and penetrating power, so that the deeper regions of the body could be explored, foreign bodies were located in the alimentary canal, and jackstones, coins, etc., impacted in the esophagus were successfully located and removed. It was found that uric-acid calculi obstructed the rays, but that gallstones were so transparent to them that they could not be differentiated from the ordinary tissues of the body. It was found that buttons on the clothing obstructed the rays, and that care must be taken not to confuse such extraneous objects with calculi.

It is in the diagnosis and treatment of fractures, however, that the x-rays seem likely to find their most important application. It has been found by numerous observers that fractures which to ordinary methods of investigation are apparently perfectly reduced, show considerable deformity under the x-rays, and it may perhaps be possible in certain cases to secure by the use of the fluoreoscope more perfect apposition of fragments than by ordinary methods. The prognosis of fractures as to rapidity of union and resulting deformity will probably be helped by the x-rays. In obscure dislocations, also, the x-rays have undoubtedly aided accurate diagnosis, and treatment.

The diagnosis of tumors of the bones and joints, and therefore the prognosis and treatment have been facilitated by the x-rays in numerous reported cases.

With regard to the admission of skiagraphs as evidence in court, although they have so far been excluded from trials in this part of the country, the opinion was expressed by the judge in a recent case tried before the Suffolk Superior Court that the information gained by the physician by means of the x-rays was of analogous character to that gained by the examination of internal organs by other instruments employed in diagnosis, and that he was disposed to admit such evidence in medical testimony. There is no doubt that at an early day such evidence will be admitted, and if exceptions are taken, the question will be carried to the Supreme Court and permanently decided.

In medicine the fluoreoscope has been proved to be of value in regard to the diagnosis of the chest, tuberculosis of the lungs, pleurisy with effusion, aneurisms of the aorta, etc.; and in the hands of Dr. Francis H. Williams of this city has been shown to be of distinct value in accurate determination of the heart's area.

The amount that has been accomplished by the x-rays during the short time they have been in use points toward the probability that as experience and experiment perfect our methods, the value of the rays in medicine and surgery will be greatly increased.

#### MEDICAL CONGRESSES AND MEETINGS.

The Second Pan-American Medical Congress was held in the City of Mexico beginning the 16th of November; the American Surgical Association met at Detroit, May 26 to 28; the American Dermatological Association, at Hot Sulphur Springs of Virginia, September 8 to 10; the American Public Health Association, at Buffalo, N. Y., September 15 to 18; the American Climatological Association, at Lakewood, N. J., May 12 and 13; the American Orthopedic Association, at Buffalo, N. Y., May 19 to 21; the American Neurological Association, at Philadelphia, Pa., June 3 to 5; the American Pediatric Society, at Montreal, Can., May 25 to 27; the American Gynecological Society, at New York, May 26 to 28; the American Laryngological Association, at Pittsburgh, Pa., May 14 to 16; the American Association of Genito-Urinary Surgeons, at Atlantic City, N. J., June 2 and 3; the Association of American Physicians, at Washington, D. C., May 1 and 2; the American Medical Association, at Atlanta, Ga., May 5 to 8; the Association of Military Surgeons of the United States, at Philadelphia, Pa., May 12 to 14; the American Academy of Medicine, at Atlanta, Ga., May 2 and 4; the American Electro-Therapeutic Association, at Boston, Mass., September 29 to October 1; the American Academy of Railway Surgeons, at Chicago, Ill., September 23 to 25; the American Medical Publishers' Association, at Atlanta, Ga., May 4; the American Microscopical Society, at Pittsburgh, Pa., Aug. 18 to 20; the American Association of Obstetricians and Gynecologists, at Richmond, Va., September 22 to 24; the National Confederation of State Medical Examining and Licensing Boards, at Atlanta, Ga., May 4; the Southern Surgical and Gynecological Association, at Nashville, Tenn., November 10 to 12; the Mississippi Valley Medical Association, at St. Paul, Minn., September 15 to 18; the Tri-State Medical Society of Alabama, Georgia and Tennessee, at Nashville, Tenn., October 13 to 15.

The Third International Congress of Dermatology

was held in London, August 4 to 8; the Fourth International Congress of Hydrology, Climatology and Geology was held at Clermont-Ferrand, France, September 20 to October 4; the International Congress of Obstetrics and Gynecology was held at Geneva, September 1 to 5; the Sixty-fourth Annual Meeting of the British Medical Association was held in Carlisle, July 28 to 31; the Twenty-fifth Anniversary Meeting of the Association of German Surgeons was held at Berlin, May 25 to 30; the Fourteenth Annual German Congress of Internal Medicine was held at Wiesbaden from the 8th to the 11th of April; the Third French Congress of Internal Medicine was held at Nancy, on August 6; the Tenth Congress of the French Surgical Association was held at Paris in October.

## LECTURES.

In connection with established lectureships in the United States and Great Britain, the following lectures and orations were delivered:

The Cartwright Lectures, before the Alumni Association of the College of Physicians and Surgeons, New York, on "The Morphology of the Ileo-Colic Junction and Large Intestine in Vertebrates," "The Evolution of the Human Cecum and Vermiform Appendix, and the Probable Lines of Derivation of the Corresponding Structures in Other Vertebrates," and "The Morphology of the Bronchial System, and its Relation to the Pulmonary Vascular Supply in Mammalia," by Dr. George P. Hunter, Professor of Anatomy in the College; the Middleton-Goldsmith Lectures on "The Relation between Inflammation and Certain Forms of Fibrous Hyperplasia," by Prof. G. J. Adami, M.D., of McGill University; the Shattuck Lecture before the Massachusetts Medical Society, on "Gangrene as a Complication and Sequel of the Continued Fevers, especially of Typhoid," by William W. Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson College, Philadelphia; the Harveian Oration on "Harvey and Galen," before the Royal College of Physicians of London, by Joseph Frank Payne, M.D. Oxon.; the Ingleby Lectures on "The Mechanism of Binocular Vision, and the Causes of Strabismus," by Priestley Smith, M.R.C.S.; the Croonian Lectures on "A Contribution to the Study of the Blood and the Circulation," by George Oliver, M.D., F.R.C.P.; the Goulstonian Lectures on "The Life-History of the Malaria Germ Outside the Human Body," by Patrick Manson, M.D., F.R.C.P., LL.D.; the Lumsden Lectures on "The Sequels of Diseases," by Sir Dyce Duckworth, M.D., LL.D. Edin., F.R.C.P. Lond.; the Erasmus Wilson Lectures on "The General Pathology of Bone," before the Royal College of Surgeons of England, by W. G. Spencer, F.R.C.S. Eng.; the Lettsomian Lectures on "The Objects and Limits of Operations for Cancer," by Watson Cheyne, F.R.C.S., F.R.S.; the Milroy Lectures on "The Value of Isolation and its Difficulties," by Edward Seaton, M.D., F.R.C.P.; the Bradshaw Lecture on "Subjective Sensations of Sound," by W. R. Gowers, M.D. Lond., F.R.S.; the Hunterian Lectures on "Infantile Syphilis," by J. A. Coutts, M.B., Cantab., M.R.C.P. Lond.; the Huxley Lecture on "Recent Advances in Science, and their Bearing on Medicine and Surgery," by Michael Foster, M.D., F.R.S.; the Cavendish Lecture on "The Centenary of the Discovery of Vaccination by Edward Jenner," by Thomas Bryant, M.D., F.R.C.S.; the Bradshaw Lecture on "Vesical Stone

and Prostatic Disorders," by Reginald Harrison, F.R.C.S. Eng.

## NECROLOGY. — FOREIGN.

William Marrant Baker, F.R.C.S., Eng. consulting surgeon to St. Bartholomew's Hospital, died October 3, aged fifty-seven.

William Cholmeley, M.D., F.R.C.P., died in London in October, aged seventy-three. He was formerly physician to the Great Northern Hospital.

Armand Després, M.D., a noted French surgeon, died in Paris in July, aged sixty-eight.

John Langdon Hayden Langdon Down, M.D., F.R.C.P., London, consulting physician to the London Hospital, died October 7, aged sixty-seven.

Sir John Eric Erichsen, professor of surgery in University College, London, died July 23, aged seventy-eight.

George Harley, M.D., late physician to University College Hospital, died in London October 27, aged sixty-seven.

Sir George Murray Humphrey, M.D., F.R.C.S., F.R.S., professor of surgery in the University of Cambridge, died at Cambridge, September 24, aged seventy-six.

Sir George Johnson, M.D., F.R.C.P., F.R.S., formerly professor of clinical medicine in King's College Medical School, and physician extraordinary to the Queen, died in July, aged seventy-eight.

Dr. Leloir, professor of dermatology in the Lille Medical Faculty, died in July at Lille, France, aged forty-two.

George Lewin, M.D., formerly professor of dermatology of Berlin University, died November 2, aged seventy-six.

E. Nicaise, M.D., a distinguished surgeon and formerly president of the Société de Chirurgie, died in Paris in July, aged fifty-eight.

Dr. Pajot, honorary professor of obstetrics in the Paris Faculty, died in Paris in October, aged eighty.

M. Constantin Paul, M.D., member of the Academy of Medicine, Professeur Agrégé of the Paris Medical Faculty, and physician attached to the Charité Hospital, died in April.

Prof. Emil DuBois Reymond, M.D., the distinguished physiologist, died in Berlin, December 24, aged seventy-eight.

Sir J. Russell Reynolds, M.D., F.R.S., F.R.C.P., physician in ordinary to her majesty's household, late president of the Royal College of Physicians, died March 29, aged sixty-eight.

Sir Benjamin Ward Richardson, M.D., died in London, November 20, aged sixty-eight.

Jules Eugene Rochard, M.D., formerly Inspector-General of the Health Department of the French Navy, died September 13, aged seventy-seven.

Dr. Nicholas Rudinger, professor of anatomy in the University of Munich, died August 25, aged forty-four.

William Reynold Salmon, M.R.C.S., died in South Wales, May 11, aged one hundred and six. He was at the time of his death the oldest physician in the United Kingdom, the oldest member of the Royal College of Surgeons and the oldest Freemason in the world.

Professor Sappey, the distinguished anatomist, died March 14, at the age of eighty-six.

Moriz Schiff, M.D., professor of physiology in the University of Geneva, died October 6, aged seventy-three.

M. Germain Sée, M.D., died in Paris on March 18, aged seventy-seven.

Mariani Semmola, M.D., died in Naples April 5, aged sixty-five. He was professor of pharmacology and therapeutics at the University of Naples.

P. Stoltz, M.D., formerly professor of obstetrics in Strasburg and Nancy, died in October, aged ninety-two.

M. Terillon, the distinguished French surgeon, died in January in Paris, aged fifty-one.

Luigi Villa, M.D., professor at the Milan Institute of Sero-therapy, died in July from accidental inoculation with a culture of glanders with which he was experimenting.

Professor Vulliet, President-elect of the International Congress of Gynecology and Obstetrics held at Geneva in September, died in April.

#### NECROLOGY. — UNITED STATES.

William Anderson, M.D., a former president of the Indiana State Medical Society, died March 29, aged seventy.

William C. Benedict, M.D., formerly chief physician to the Blockley Hospital for the Insane in Philadelphia, died in Brooklyn, N. Y., August 17, aged seventy-six.

P. F. Beverly, M.D., at one time president of the Ohio State Medical Society, died at Columbus, Ohio, September 18, aged sixty-nine.

John H. Callender, M.D., professor of materia medica and therapeutics, and afterwards of diseases of the brain and nervous system, in the University of Nashville, and formerly editor of the *Nashville Patriot and Union and American*, died August 7, aged sixty-four.

James Edgar Chancellor, M.D., formerly demonstrator of anatomy in the medical department of the University of Virginia, and president of the Virginia State Medical Society, died September 11, aged seventy.

Charles J. Chalkley, M.D., professor of medical jurisprudence and toxicology in the University College of Medicine, Richmond, Va., died September 13, aged thirty-six.

George C. Shattuck Choate, M.D., for ten years the superintendent of the Taunton Insane Asylum, died at Pleasantville, N. Y., June 26, aged seventy.

Thomas Ferris Cock, M.D., consulting physician to the City Hospital, New York, N. Y., and formerly president of the College of Physicians and Surgeons, died June 11, aged seventy-seven.

Hiram Corson, M.D., died at Plymouth Meeting, Penn., on March 4, aged ninety-two.

David L. Daggett, M.D., aged seventy-five, died in New Haven, February 23. He had been president of the New Haven Medical Society, president of the New Haven County Medical Society and a member of the Connecticut Medical Society since 1843.

Kenneth N. Fenwick, M.D., of Kingston, Can., professor of obstetrics and gynecology in Queen's University, Kingston, died in January of septicemia, aged forty-five.

Charles S. D. Fessenden, M.D., U.S.M.H.S. (retired), died in Portland, Me., July 23, aged seventy-two. He was born in Portland in 1828, a son of General Samuel Fessenden. He was at his death the oldest surgeon in the United States Marine-Hospital Service.

Carleton Pennington Frost, M.D., LL.D., dean and professor of the science and practice of medicine in Dartmouth Medical College, died in Hanover, N. H., May 24, aged sixty-six. He was a trustee of Dartmouth College and he had for many years been one of the trustees of the State Insane Asylum. He had been president of the State Medical Societies of New Hampshire and Vermont.

George D. Holstein, M.D., formerly president of the Brooklyn Dermatological Society, and editor of a journal devoted to skin diseases, died August 21, aged thirty-nine.

Thomas Horn, M.D., formerly professor of the Institute of Medicine at the Albany Medical College, died at Albany, N. Y., June 18, aged eighty-eight.

William Hunt, M.D., of Philadelphia, died in that city on April 17, aged seventy-one. He was demonstrator of anatomy in the medical department of the University of Pennsylvania from 1854 to 1864, and surgeon to the Pennsylvania Hospital from 1863 to 1893.

James H. Leavitt, M.D., one of the oldest dentists in Massachusetts, died in Pittsfield, September 28. He was eighty years old and had been in continuous practice for sixty-one years.

Abraham Livezey, M.D., one of the oldest physicians of Pennsylvania, and at one time professor of obstetrics in the Woman's Medical College of Philadelphia, died August 31, aged seventy-five.

Professor George H. Markoe, founder of the Massachusetts College of Pharmacy, and for many years identified with all its interests, died in Boston in September.

Laughton McFarlane, M.D., professor of surgery at Toronto University, died February 29, aged fifty-four.

James Bissett Murdoch, M.D., of Pittsburgh, late dean of the Western Pennsylvania Medical College and a former president of the Pennsylvania Medical Society, died October 29, aged sixty-six.

Henry K. Putney, M.D., formerly superintendent of the Kentucky State Insane Asylum at Louisville, died at Garrettsville, Ky., September 2, aged sixty-nine.

Francis Huntington Rankin, M.D., died in Newport, R. I., November 9, in the fifty-first year of his age.

James E. Reeves, M.D., of Chattanooga, Tenn., died on January 4, at the age of sixty-seven years, after a short illness. He was a trustee of the American Medical Association and had at different times held numerous important public positions, both within and without the medical profession.

Frank Whitman Ring, M.D., executive surgeon of the Manhattan Eye and Ear Hospital, New York City, died at New Haven, Conn., July 17, aged forty-eight.

John Howard Ripley, M.D., consulting physician to St. Joseph's Hospital and to the Hospital for Ruptured and Crippled, formerly clinical professor of the diseases of children in the University of the City of New York, died February 14, aged fifty-nine.

James West Roosevelt, M.D., died on April 10, aged thirty-eight. He was attending physician to Bellevue and Roosevelt Hospitals, New York City.

George W. Ryan, M.D., surgeon to St. Mary's and the Presbyterian Hospitals, Cincinnati, O., died July 11, aged thirty-six.

Moses W. Russell, M.D., of Concord, N. H., died

April 17, aged fifty-nine. He was secretary of the New Hampshire Medical Society in 1879 and 1880 and president in 1892.

Leonard J. Sauford, M.D., formerly professor of anatomy and physiology in Yale University, died in New Haven, Conn., December 12.

Samuel Sexton, M.D., the distinguished otologist, died in New York on July 11, aged sixty-three.

Charles Styer, M.D., formerly physician to the German Hospital, Philadelphia, and acting assistant surgeon United States Marine-Hospital Service, died July 6, aged forty-six.

Joseph M. Toner, M.D., of Washington, died in September at the age of seventy-one. He was president of the American Medical Association in 1873, and of the American Public Health Association in 1874.

W. H. Wilkes, M.D., some time professor of obstetrics and childrens' diseases in Kansas City, and president of the Texas State Medical Association, died in September, aged sixty-three.

William Wallace, M.D., who served as surgeon to the British Army during the Crimean War, died in Brooklyn, N. Y., December 22, aged sixty-one. He was connected with several hospitals in Brooklyn.

#### NECROLOGY—MASSACHUSETTS MEDICAL SOCIETY.

H. C. Chapin, M.D., died in Lincoln, October 31, aged eighty-one.

Oscar Dustin Cheney, M.D., died in Haverhill, October 29, aged fifty.

George Badger Cogswell, M.D., died in North Easton, March 6, aged sixty-one.

George Walter Copeland, M.D., died in Middleborough, April 30, aged fifty.

Thaddeus Thompson Cushman, M.D., died in Randolph, February 6, aged seventy-six.

Eugene Fillmore Dunbar, M.D., died in Roxbury, February 20, aged forty-four.

James Dunlap, M.D., died in Northampton, August 3.

William Crauch Bond Fifield, M.D., died in Dorchester, September 10, aged sixty-eight.

Edward Jacob Forster, M.D., of Boston, died May 15, aged forty-nine.

Samuel Tappan Harmon, M.D., died in West Roxbury, February 7, aged thirty-seven.

Frank Whitman Harriman, M.D., died in Boston January 7, aged twenty-one.

Richard Manning Hodges, M.D., died in Boston, February 9, aged sixty-eight.

William Cooke Holyoke, M.D., died in Boston, November 6, aged fifty-four.

Amos Howe Johnson, M.D., died in Salem, May 12, aged sixty-four.

George Wallace Kelley, M.D., formerly of Barnstable, died at Pasadena, Cal., May 20, aged thirty-nine.

John Milne Mackenzie, M.D., died in Fall River, July 11, aged forty-one.

Robert Wingate Newell, M.D., died in Boston, April 9, aged eighty-one.

Franklin Williams Pierce, M.D., formerly of Marston Mills, died at Edgartown, October 19.

George Henry Randall, M.D., died in North Rehoboth, January 18, aged seventy.

Joshua Bartlett Rich, M.D., died in Worcester, February 25, aged fifty-one.

John Lombard Robinson, M.D., died in Manchester, N. H., June 13, aged sixty-one.

Walter Scott Robinson, M.D., died in Taunton, June 4, aged fifty-seven.

Adolphe Gaston Roeth, M.D., died in Boston, December 10, aged forty-six.

Daniel Denison Slade, M.D., died at Chestnut Hill, February 11, aged seventy-two.

Andrew Murray Smith, M.D., died at Williamstown, October 25.

John Stetson, M.D., died in West Harwich, February 19, aged eighty-one.

Frank Dana Switzer Stevens, M.D., died in Lynn, February 13, aged thirty-five.

George Whitfield Ward, M.D., died in Upton, December 11, aged seventy-nine.

Royal Sibley Warren, M.D., died at Colorado Springs, Col., February 13, aged seventy-three.

Frank Edward Weil, M.D., died in North Andover, January 6, aged thirty-five.

William Williamson Wellington, M.D., died at Cambridge, October 27, aged eighty-two.

Edward Wigglesworth, M.D., died in Boston, January 23, aged fifty-five.

Samuel Edwin Wyman, M.D., died in Cambridge, May 7, aged forty-three.

During the year 1896 thirty-three members of the Society have died, the number being exactly the same as that of the preceding year. The average age was fifty-seven and one-half years, and that for the previous year being sixty-six years. Three were over eighty years of age; nine were seventy or over. There were six deaths under forty years of age. The lowest age of death was twenty-one, and the highest eighty-two.

#### MEDICAL NOTES.

##### BOSTON AND NEW ENGLAND.

**THE WILLIAM H. THORNDIKE PRIZE.**—The Committee of the Harvard Medical School to make the award of the William H. Thorndike Prize, have reported that they found no essay worthy of a prize.

**BEQUEST TO A HOSPITAL.**—By the will of Elizabeth J. Warren, late of Brookline, Mass., the following bequest was made: To the Massachusetts General Hospital, the "Health Pasture," so called, in Brookline, containing sixty acres, and a wood-lot, near the same, containing eleven acres, the same to be sold, at some favorable time, and the proceeds applied toward the maintenance and support of as many charitable free beds in the surgical department as the officers of the hospital may deem fit, the beds to be known as the J. Sullivan Warren free beds.

**THE WIDOW'S MIGHT.**—A prominent member of Worcester's park commission, who died recently, provided in his will that his body should be taken to Forest Hills Cemetery, and there cremated. His ashes were then to be taken to the summit of a hill in one of the parks, and scattered to the four points of the compass. He is said to have made this provision as a protest against the unnecessary pomp, ceremony, and expense of funerals as they are ordinarily conducted. The wishes of his widow, however, prevailed against the desires of her late husband, and he was buried in the usual manner, after a simple funeral service.

## METEOROLOGICAL RECORD

For the week ending December 19th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom- eter.		Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. •		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...13	29.74	49	58	40	86	76	81	S.W.	S.W.	13	12	O. C.
M...14	30.04	37	47	27	68	41	54	W.	N.W.	11	13	O. C.
T...15	30.15	26	31	20	77	71	74	N.W.	N.E.	13	22	O. C.
W...16	29.77	24	31	17	98	87	92	N.	N.	33	31	N. C.
Th...17	30.10	23	35	22	51	50	50	N.W.	N.W.	14	11	C. C.
F...18	30.06	31	41	21	55	90	72	S.E.	S.E.	6	15	O. C.
S...19	29.90	28	39	18	73	51	62	W.	W.	18	18	C. C.

\* O., cloudy; C., clear; F., fair; G., fog; H., haze; S., smoky; R., rain; T., threat-  
ening; N., snow. † Indicates trace of rainfall. — Mean for week.

## RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 19, 1896.

Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from					
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Iptheria and croup.	
New York	1,892,332	625	192	11.04	12.32	1.28	.48	5.92	
Chicago	1,678,967	—	—	—	—	—	—	—	
Philadelphia	1,164,040	384	126	16.12	17.94	—	5.98	8.32	
Brooklyn	1,100,000	—	—	—	—	—	—	—	
St. Louis	580,000	170	74	4.72	19.47	—	.59	5.13	
Boston	491,205	180	54	9.52	20.72	—	.56	5.60	
Baltimore	496,315	163	40	9.15	12.20	.61	2.44	4.88	
Cincinnati	336,000	102	—	9.00	13.00	3.00	4.00	2.00	
Cleveland	314,587	—	—	—	—	—	—	—	
Washington	275,500	95	19	8.56	14.48	1.56	2.12	2.12	
Pittsburg	238,617	72	26	15.29	20.65	6.96	4.17	4.17	
Milwaukee	275,000	—	—	—	—	—	—	—	
Nashville	87,754	29	9	6.90	10.35	—	3.45	3.45	
Charleston	65,165	—	—	—	—	—	—	—	
Portland	40,000	—	—	—	—	—	—	—	
Worcester	96,687	—	—	—	—	—	—	—	
Fall River	88,020	41	20	9.76	31.72	—	—	2.44	
Lowell	84,359	24	8	4.16	33.33	—	—	—	
Cambridge	81,519	25	10	12.00	24.00	8.00	4.00	—	
Lynn	62,355	19	—	—	10.52	—	—	—	
New Bedford	55,254	19	8	15.78	6.25	5.25	—	5.25	
Springfield	51,534	15	2	6.68	—	6.66	—	—	
Lawrence	52,153	21	12	4.76	—	—	—	4.76	
Holyoke	40,149	—	—	—	—	—	—	—	
Salem	34,437	11	2	—	9.09	—	—	—	
Brockton	33,157	—	—	—	—	—	—	—	
Haverhill	30,185	14	3	—	21.42	—	—	—	
Malden	29,709	3	1	—	33.33	—	—	—	
Chelsea	31,295	12	4	25.00	—	—	8.33	16.66	
Fitchburg	26,394	15	7	13.33	6.66	—	6.66	6.66	
Newton	27,122	10	2	10.00	10.00	—	10.00	—	
Gloucester	27,663	—	—	—	—	—	—	—	
Taunton	27,093	10	2	—	10.00	—	—	—	
Waltham	20,877	4	3	—	50.00	—	—	—	
Quincy	20,712	—	—	—	—	—	—	—	
Pittsfield	20,447	—	—	—	—	—	—	—	
Everett	18,578	4	2	—	—	—	—	—	
Northampton	16,738	—	—	—	—	—	—	—	
Newburyport	14,554	3	2	66.66	—	—	33.33	33.33	
Amesbury	10,920	—	—	—	—	—	—	—	

Deaths reported 2,157: under five years of age 626; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 232, acute lung diseases 341, consumption 250, diphtheria and croup 113, typhoid fever 47, diarrheal diseases 29, scarlet fever 12, whooping-cough 10, measles, cerebro-spinal meningitis and erysipelas 7 each.

From scarlet fever New York 7, Boston 3, Philadelphia 2. From whooping-cough New York 3, Philadelphia and Washington 2 each, Baltimore, Boston and Lowell 1 each. From measles New York 6, Lowell 1. From cerebro-spinal meningitis New York 3, Boston, Washington, Somerville and New Bedford 1 each. From erysipelas Philadelphia 3, New York 2, Baltimore and Boston 1 each.

In the thirty-three greater towns of England and Wales, with

an estimated population of 10,846,971, for the week ending December 12th, the death-rate was 18.9. Deaths reported, 3,927: acute diseases of the respiratory organs (London) 346, diphtheria 78, whooping-cough 77, fever 45, scarlet fever 45, diarrhea 40.

The death-rates ranged from 12.4 in Croydon to 24.9 in Gateshead: Birmingham 21.5, Bradford 16.6, Brighton 23.4, Hull 17.7, Leeds 17.5, Leicester 12.4, Liverpool 22.5, London 18.1, Manchester 24.4, Newcastle-on-Tyne 16.0, Nottingham 21.1, Oldham 22.5, Portsmouth 16.9, Sheffield 15.9.

## OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 17, 1896, TO DECEMBER 23, 1896.

The extension of leave of absence on account of disability, granted MAJOR CLARENCE EWEN, surgeon, is still further extended until January 24, 1897, on account of disability.

The leave of absence for seven days granted FIRST-LIEUT. BENJAMIN BROOKE, assistant surgeon, Fort Thomas, Ky., is extended twenty-three days.

## HARVARD MEDICAL SCHOOL.

## EVENING LECTURES.

The next lectures will be given on Thursday, January 7th and 14th, at 8 P. M., by ASST.-PROF. FRANCIS H. DAVENPORT. Subject: "Displacements of the Uterus." The profession are invited.

## RECENT DEATH.

PROF. EMIL DUBOIS REYMOND, the distinguished physiologist, died in Berlin, December 26th, aged seventy-eight years.

## BOOKS AND PAMPHLETS RECEIVED.

Massachusetts Institute of Technology, Boston. The Course in Mining Engineering and Metallurgy. 1896.

An Easy Method for Seeing the Capillary Circulation in One's Own Retina. By C. E. Norton, M.D., Lewiston, Me. Reprint. 1896.

Description of a Few of the Rarer Complications Occurring during and following Cataract Extraction. By Charles A. Oliver, A.M., M.D. Reprint. 1896.

Acute Suppurative Inflammation of the Middle Ear; Acute Suppurative Mastoiditis; Abscess of the Neck; Operation. By Seth Scott Bishop, M.D., D.C.L., Chicago. Reprint. 1896.

Clinical and Pathological Report of a Case of Cerebral Syphilis. By George Emerson Brewer, M.D., Attending Surgeon, City Hospital, and Pearce Bailey, M.D., Assistant in Neurology, Vanderbilt Clinic. Reprint. 1896.

Diseases of the Stomach, A Text-Book for Practitioners and Students. By Max Einhorn, M.D., Instructor in Clinical Medicine at the New York Post-Graduate Medical School and Hospital. New York: William Wood & Co. 1896.

A Successful Case of Removal of a Large Brain-tumor from the Left Frontal Region; Opening and Packing of the Lateral Ventricle with Iodoform-gauze. By H. M. Thomas, M.D. and W. W. Keen, M.D., Philadelphia. Reprint. 1896.

The Principles of Theoretical Chemistry, with Special Reference to the Constitution of Chemical Compounds. By Ira Remsen, Professor of Chemistry in the Johns Hopkins University. Fifth edition, thoroughly revised. Philadelphia and New York: Lea Brothers & Co. 1897.

A Treatise on the Surgery of the Alimentary Canal, comprising the Esophagus, the Stomach, the Small and Large Intestines, and the Rectum. By A. Ernest Maylard, M.B., B.S., (Lond.), Surgeon to the Victoria Infirmary, Glasgow, etc Philadelphia: P. Blakiston, Son & Co. 1896.

The History of the Discovery of Anesthesia. By Burnside Foster, M.D. Fifty years of Surgery under Anesthesia. By Theodore F. DeWitt, M.D. Papers read at the Semi-Centennial Celebration of the Discovery of Anesthesia, at the University of Minnesota, October 16, 1896. Reprint. 1896.

A Clinical Study of Twenty-one Thousand Cases of Diseases of the Ear, Nose and Throat. Adenoid Vegetations in the Vault of the Pharynx. The Doctorate Address Delivered at the Commencement of the Illinois Medical College. By Seth Scott Bishop, B.S., M.D., LL.D., Chicago. Reprints. 1896.

Report of a Case of Typhoid Fever Complicated by Extra-uterine Pregnancy. On the Importance of Physical Signs other than Murmur in the Diagnosis of Valvular Diseases of the Heart. Thyroid Therapy. Nervous Shock and Disease of the Nervous System as a Cause of Pernicious Anemia. By James B. Herrick, M.D., Chicago, Ill. Reprints. 1896.

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THURSDAY, DECEMBER 31, 1896.

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these preparations are so slight as to render them practically of no value as digestants, whatever may be their usefulness when acting as nutritives. Within the past few months a Japanese investigator has obtained such a valuable diastatic product that his researches deserve careful study and his results thorough trial. If, as he has apparently proved, we possess in Taka-Diastase a starch-digestant equal to or exceeding in power pepsin or pancreatin for proteids, we have made an extraordinary gain in therapeutics, for we are now able to relieve a large number of persons suffering from faulty digestion of starch, and can aid our patients during convalescence, so that they speedily regain their weight and strength by the ingestion of large quantities of the heretofore indigestible, but nevertheless very necessary, starchy foods.

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## DREES' Liquor Ferri Albuminati.

It is one of the "old-fashioned" preparations which can only be obtained on physicians' prescriptions.

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# OAKLAND HYDROGEN DIOXIDE

is a stable, pure solution of  $H_2 O_2$ , made in accordance with U. S. Pharmacopœia requirements, and thoroughly reliable for all medicinal purposes. It is free from pressure upon opening bottle, and retains its strength from four to six months, corked or uncorked.

In DIPHTHERIA, ULCERATIVE PROCESSES, NOSE and THROAT affections, BURNS, LEUCORRHOEA, and in all cases where a non-irritating antiseptic is indicated it is of surpassing value.

Sample and monograph containing full instructions for use, free on receipt of 15c. to prepay express charges.

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## A NATURAL HUNGARIAN APERIENT WATER.

Bottled at the **UJ HUNYADI** Springs, Buda Pest, Hungary,

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"We know of no stronger or more favorably constituted Natural Aperient Water than that yielded by the Uj Hunyadi Springs."

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Royal Councillor, M.D., Professor of Chemistry, and  
Director of the Royal Hungarian State Chemical  
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"THE NEW YORK MEDICAL JOURNAL" says:—"Remarkable for its richness in magnesium sulphate, exceeding that of all other bitter waters."—"Always of the same strength, which, of course, is a matter of great importance."—"Gentle but satisfactory in its action."

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"The proportion of Sulphate of Soda to Sulphate of Magnesia is 15.432 to 24.4968 in the litre, so that this Water may be classed with the best Aperient Waters and be pronounced one of the strongest."

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EMPLOYED AT THE MASSACHUSETTS GENERAL HOSPITAL, CARNEY HOSPITAL, ST. ELIZABETH'S HOSPITAL, U.S. MARINE HOSPITAL, WOMAN'S CHARITY CLUB HOSPITAL, ETC., AND AT THE LEADING HOSPITALS IN ENGLAND.

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## MENSMAN'S PEPTONIZED BEEF TONIC

Contains all the carbohydrates, phosphoid elements, blood salts, peptones—in fact, every nutritive element which goes to make up the human organism in the *exact proportions* in which they are found in the living body, without their extraneous or indigestible properties, and therefore requires the least effort on the part of the stomach for its conversion into chyle and immediate assimilation by the system.

**JOHN G. HASSARD & CO.,**  
Literature and  
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SUCCESSORS IN OWNERSHIP OF  
**MENSMAN'S PEPTONIZED BEEF TONIC**

TO HAZARD, HAZARD & CO.,

SUCCESSORS TO CASWELL, HAZARD & CO.

## DAVIDSON PORTABLE ATOMIZING AND POWDER BLOWING APPARATUS . . .



WE would call the attention of the profession to this set, which gives the advantages of a condenser and at the same time is so compact that it can easily be carried from place to place in its box, which only measures 7 x 12 inches and 4 inches high. With the foot pump a pressure of 30 pounds can be obtained, leaving both hands free to manipulate the spray and tongue depressor. Of the sprays, Dr. Ingals, of Chicago, says:

Extract from the Journal, Feb. 18th.

All atomizers thus far have been more or less defective, but the one shown is the one comes nearer to perfection than any other I have seen.

The spray tube itself in the instrument is not new, it being the same as that in Davidson's No. 50 Hand Atomizer, which, by the way, is now the best instrument in the market for the patient's use, if one is careful to order the screw top and long tip. One of these tubes I have had in almost constant use for many years, and it is still good.

E. FLETCHER INGALS, A.M., M.D.  
Chicago Medical Society.

Send for our descriptive circular.

**DAVIDSON RUBBER CO., 19 MILK STREET, BOSTON, MASS.**

## “THE USE OF ANTITOXIN

“in any case of diphtheria should not interfere  
“with the local treatment of the throat and  
“the employment of other judicious measures  
“for the relief of the patient.”

HORATIO C. WOOD, M.D., LL.D.—*“Animal Extracts.”*

TRYPSALIN, Fairchild's diphtheritic solvent, is an effective, innocent and agreeable solvent for false membrane and exudation in diphtheria, tonsilitis, etc. It is to be applied to the throat by an insufflator or powder blower.

TRYPSALIN simply dissolves morbid membrane and mucus, exerts a marked healing effect, is without action upon healthy mucous membrane, and is entirely innocent.

We have received many reports of the successful application of TRYPSALIN as a most effective adjunct to the treatment of diphtheria, greatly relieving the distressing local symptoms and contributing to the recovery.

Sample and descriptive circular sent upon application.

FAIRCHILD BROS. & FOSTER,  
NEW YORK.

# BLANCARD'S PILLS

Of Unchangeable Iodide of Iron.

BLANCARD'S PILLS OF IODIDE OF IRON are so scrupulously prepared, and so well made, that none other have acquired a so well-deserved favor among physicians and pharmacutists. Each Pill, containing one grain of Proto-Iodide of Iron, is covered with finely pulverized Iron, and covered with Balsam of Tolu. DOSE: two to six pills a day. The genuine have a *reactive silver seal* attached to the lower part of the cork, and a green label on the wrapper, bearing the fac-simile of the signature of



PHARMACIEN,

No. 40 Rue Bonaparte, - - - Paris,

Without which none are genuine.

BEWARE OF IMITATIONS.

# DUCRO'S ALIMENTARY ELIXIR,

A Combination uniting the Properties of

Alcoholic Stimulants and Raw Meat.

This preparation, which has been used with great success in the hospitals of Paris since 1868, is adapted to the treatment of all diseases requiring the administration, in a small volume, of a tonic able to stimulate and support the vital forces, as

Adynamia,

Depression and

Nervous Debility,

Pulmonary Phthisis,

Malarious Cachexia, etc.

— PREPARED BY —

EMILE DURIEZ & CO.,

Successors to DUCRO & CIE.,

PARIS.

# BOUDAULT'S PEPSINE

Used Exclusively in the Paris Hospitals for nearly Forty Years.

This preparation has grown steadily in the esteem of physicians, from the fact that it is Pure and Uniform in its composition, and consequently, Reliable and Effective in its results.

Approved tests demonstrate that Boudault's Pepsine possesses the highest digestive power of any known peptonizing agent. Since its introduction to the medical profession by Boudault and Corvisart in 1864, it has been justly regarded as the best digestive ferment in every respect, thus far known to therapeutics, since it is stable and does not deteriorate with age.

Boudault's Pepsine is indicated in all cases in which aids to digestion are required; not only in gastric insufficiency, but in convalescence from fevers, and in asthenic conditions from whatever cause.

Boudault's Pepsine is prepared in the form of Pepsine Acid and Pepsine Neutral. It is sold in bottles of one ounce, with a measure containing exactly five grains, also in bottles of 4, 8 and 16 ounces for dispensing.

# BOUDAULT'S WINE OF PEPSINE.

FORMULA OF De CORVISART.

The taste of Pepsine being perfectly disguised in this Wine, it may be recommended to persons who have difficulty in taking Pepsine in the form of powder. This wine is tested so that a tablespoonful of it is equal in digestive power to ten grains of Boudault's Pepsine in powder.

Sold only in bottles of 8 ounces.

That the Boudault Preparations of Pepsine are of irreproachable quality and activity is attested by the awards it has received at the Expositions of 1867, 1868, 1872, 1873; in 1876 at the Centennial Exposition of Philadelphia; and in 1878 and 1880 at the Paris Exposition.

Agents for the United States, E. FOUGERA & CO., New York.

# FERRATIN

"is an organic preparation, and exists preformed in the liver and other parts of animals.

"Ferratin is a reddish-brown powder, odorless and tasteless, and contains about 7 per cent. of iron. It is not a mechanical mixture of iron salts with albumin, but a genuine chemical combination. The dose ranges from 5 to 15 grains, and is best given in powder, wafer, or capsule. In children it may be suspended in milk. A solution may be made with the aid of sodium bicarbonate, and this presents some advantages in certain states of the stomach and some forms of disease.

"Ferratin is a combination of iron of special utility in that it is prepared for assimilation both primary and secondary. It is readily taken and well borne by children and fastidious adults, and as a chalybeate is both prompt and efficient. As it is already in combination with albumin, it is especially adapted to the formation of red-blood globules and should therefore be employed when the relative proportion of them is too low. It has the advantage of all other preparations of iron, that they must be converted into this before being absorbed. In **anæmia**, **chlorosis**, **convalescence** from acute diseases, **chronic cardiac** and **renal diseases** with anæmia, and in **nervous affections**, it has been found most effective. That ferratin is taken up in the structure of the blood and tissues is apparent in the fact that no portion of that taken, nor any product thereof, escapes by the kidneys."

*ROBERTS BARTHOLOW.*

Clinical Reports Mailed on Request, by C. F. Boehringer & Soehne, 7 Cedar St., New York.

Extract from page 153:  
**A Practical Treatise on Materia Medica  
and Therapeutics.**  
BY  
ROBERTS BARTHOLOW, M.A., M.D., LL.D.  
Professor Emeritus of Materia Medica, General Therapeutics and Hygiene, in the  
Jefferson Medical College, of  
Philadelphia, etc., etc.  
Ninth Edition, Revised and Enlarged.  
1896.



# QUINACETINE Sulphate,

composition  $(C_{21}H_{21}N O_2)_2 H_2SO_4 H_2O$  separates from a partly saturated boiling aqueous solution on cooling

in beautiful fungoid tufts consisting of snow-white crystals radiating from a centre. When carefully dried upon bibulous paper the Sulphate of Quinacetine presents itself in the form of fine, lustreless, snow-white needles

adhering in tufts; has an elastic, velvety feel and is easily reduced to a soft powder between the fingers.

The Sulphate of Quinacetine bears a close resemblance to the Sulphate of Quinine and imparts a slightly astringent and bitter taste. The base "quinacetine," forms three series of salts with acids analogous to those of the alkaloid "quinine" and has similar properties of solubility. The sulphate forms freely soluble bi-salts, incompatible with all metals, metallic hydrates and the carbonates.

It possesses powerful Antipyretic and Anodyne virtues and exerts a specific influence in malarial attacks.

In doses of 5 to 15 grains, Quinacetine Sulphate displays a powerful calming influence upon the system which is manifest in its property to eradicate pain and allay nervous excitability and in reducing the abnormal temperature of the body.

The particular class of diseases wherein this medicament might be expected to afford great advantage are those characterized by high inflammatory symptoms and where pain and restlessness supervene:—The Acute, Inflammatory fevers, Pneumonia, Pleurisy, Scarlet fever, Bilious fever, Continued fever, Tuberculosis, Endocarditis, Pericarditis, Cardialgia, Angina Pectoris, Malaria, Iritis, Alcoholism, Laryngitis, Measles, Bronchitis, Neurotic pains, Pelvic pains, Uterine headache, Cephalalgia, Local Pyrexia, Sciatica, Erysipelas, Dysmenorrhoea, Child-bed fever, Neuralgias, and diseases of the Rheumatic and Gouty diatheses, etc.

As an Antipyretic and Antiperiodic, it is believed to be superior to Quinine, Phenacetine, and Antipyrine.

In this connection the patient does not experience the unpleasant after-effects which characterize the use of quinine and on the other hand its use IS NOT followed by cyanosis or collapse which is said to oftentimes result from the administration of more familiar antipyretics.

Its solubility in acid solution enables Quinacetine to be given in liquid, pill, powder or capsule form, alone or in combination with other remedies, to suit each individual case.

Quinacetine Sulphate has been given successfully in doses from 5 to 30 grains.

Professor Babcock says, it DOES NOT CONTAIN Acetanilid, Phenacetine or Quinine.

Boston, May 26, 1896.

To T. METCALF CO.

I have examined the specimen of the Quinacetine Sulphate sent by you with the following results:

I do not find it contains any Acetanilid, Phenacetine or Quinine.

It is a Sulphate, and while, of course, I cannot vouch for its composition as far as the base is concerned, I have found nothing to the contrary.

The properties, incompatibilities, etc., I have found to be as described in the pamphlet.

The presumption is that it is what it claims to be, as regards composition, and I have found no chemical evidence to the contrary.

Yours truly,

(Signed) JAMES F. BABCOCK.

FOUR TIMES THE BULK OF PHENACETINE WHEN IN CRYSTALS  
Powdered is three-fourths bulk.

PRICE, \$1.00 PER OUNCE.

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Sent by mail on receipt of price.

T. METCALF CO.,

Sole Representatives for New England.

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*Uniformly Effective, Agreeable and Lasting,—the  
Standard Preparation of Erythroxyton Coca*

During past 30 years  
most popularly used  
Tonic-Stimulant in  
Hospitals, Public and  
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everywhere.

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MARIANI**

We have received  
over 7000 written  
endorsements from  
PROMINENT PHYSI-  
CIANS in Europe and  
America.

"MARIANI WINE"

**FORMULA :** The concentrated extract—the aromatic principle of the fresh Coca Leaf,  
blended with a special quality of grape juice of southern France.

**DOSE :** Wine-glassful three times a day, or more or less at Physician's discretion.

**Nourishes - Fortifies - Refreshes  
AIDS DIGESTION - STRENGTHENS THE SYSTEM**

AGREEABLE TONIC-STIMULANT WITHOUT UNPLEASANT REACTION.

To avoid disappointment please specify "Vin Mariani."

SOLD AT ALL PHARMACIES.

PARIS: 41 Boulevard Haussmann.  
LONDON: 239 Oxford Street.  
MONTREAL: 28 Hospital Street.

MARIANI & CO., 52 W. 15th St., New York.



**It never irritates**

if used with a clean needle.

Dose: 5 to 20 minims.

**It never nauseates**

when given by the mouth.

Dose: 5 to 30 minims.

50 Cents net per Bottle to Physicians.

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Your Druggist has it or can get it for you.

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Has removed his practice from  
Boston to Denver, Colorado.

McPHER BUILDING,  
Cor. 17th and Glenarm Sts.

**Dr. Kadner's Sanitarium****NIEDERLOESNITZ,**

Near Dresden.

Institute for the Cure of

All Derangements and  
Diseases of the Stomach,  
Loss of Appetite, etc.

Clinical Observation and Treatment . .

**DR. KADNER DR. BERGER**

The Publishers of this Journal take pleasure  
in calling the attention of its readers to the  
advertisement, on page 4, of the Breakfast  
Cocoa made by the Walter Baker Co., Limited.

This preparation has stood the test of more  
than 100 years' use among all classes of people  
and for purity and honest worth is unequalled.

**LONG ISLAND HOSPITAL**

Training School for Nurse Attendants.

Classes are now being formed. Instruction is  
given in the principles and practice of nursing,  
including obstetrical. Course one year; a  
moderate salary is paid. For full particulars,  
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C. H. COGSWELL, M.D.,  
Superintendent.

LONG ISLAND, BOSTON HARBOR.

**WANTED**

An assistant physician at "THE HIGHLANDS,"  
private hospital. Must be a total abstainer from  
alcohol and tobacco.

Address DR. F. W. RUSSELL,  
Winchendon, Mass.

See Advertisement of

**VINOLIA SOAP,****PAGE 29.****New York Orthopædic  
Dispensary and Hospital**

126, 128 and 130 East 59th Street, New York.

**TWENTIETH ANNUAL  
COURSE OF LECTURES**

The Trustees of the New York Orthopædic Dispensary and Hospital announce that

**Dr. NEWTON M. SHAFER**

WILL GIVE A

**COURSE OF LECTURES**

ON

**Orthopædic Surgery,**

At the Institution, on

**Monday and Thursday Afternoons,**

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1897 (both inclusive).

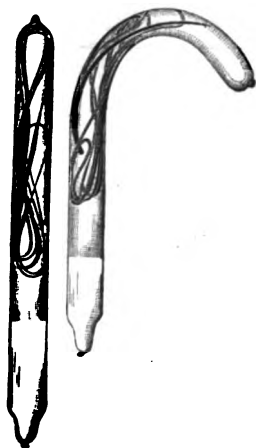
**THE LECTURES WILL BE CLINICAL**

The course will be free to the Medical Profession  
and students.

**HENRY L. SLOTE, Chairman,**

Committee on Clinical Instruction.

NEW YORK, December 27, 1896.

**STERILIZED  
CATGUT SUTURES**

Have you ever stopped to think that the Best is the Cheapest?  
Our Catgut Sutures in Sealed Glass Tubes, guaranteed absolutely Sterile, are unsurpassed for Emergencies.

**PEAKE & BUZZELL, 126 CANAL STREET,**

MANUFACTURERS OF

... BOSTON.

**SURGEONS' STERILIZED SUPPLIES.****COLCHI-SAL**

(Colechleine Salicylate.)

* Dispensed in Capsules, gives
* Safe, Prompt and Positive
* results in <i>all</i> cases of

**GOUT AND RHEUMATISM.**

Depot: E. FOUGERA &amp; CO., 26, 28 and 30 N. William Street, New York.

**IN CONFIRMATION** of the fact that the **IMPERIAL GRANUM** has acquired the enviable reputation of being a prepared food of standard value,—“one that has stood the test of many years, and which will have satisfactory results in nutrition far into the future, because it is based on merit and proven success in the past?”—we offer the following selection from the many letters of encouragement and approval that we have recently received from physicians.

Very respectfully,

THE IMPERIAL GRANUM COMPANY.

October 1st, 1896.

JUNE 6th, 1896.

I have learned to rely on **IMPERIAL GRANUM** as a food for children, and have found it indispensable for debilitated persons and for those convalescing from disease.

—M.D., Augusta, Ga.

JUNE 16th, 1896.

I have used **IMPERIAL GRANUM** in my practice for a number of years and find it very satisfactory, especially in bowel troubles.

—M.D., Beatrice, Nebraska.

JUNE 17th, 1896.

I often prescribe it for nurses who are on night duty, and always find it beneficial to them—giving them strength for their work.

—M.D., Boston, Mass.

JUNE 20th, 1896.

I have administered **IMPERIAL GRANUM** with most gratifying results in continued fevers, and in other wasting diseases, and have found that it will often be retained and assimilated when all other similar preparations are rejected. It has also given me perfect satisfaction as a food for infants.

—M.D., Milford, Delaware.

JUNE 25th, 1896.

I most cheerfully recommend the **IMPERIAL GRANUM**.

—M.D., Brooklyn, N. Y.

JULY 2d, 1896.

Have used the **IMPERIAL GRANUM** and get good results from it.

—M.D., Albany, N. Y.

JULY 3d, 1896.

I have found **IMPERIAL GRANUM** a most satisfactory food product.

—M.D., Batavia, Ills.

JULY 13th, 1896.

**IMPERIAL GRANUM** gives me great satisfaction.

—M.D., Birdsall, N. Y.

JULY 15th, 1896.

I have great faith in **IMPERIAL GRANUM** when the stomach will tolerate neither medicine nor other food, having just had such a case in my own family.

—M.D., Claverack, N. Y.

JULY 15th, 1896.

I have found **IMPERIAL GRANUM** not only a most valuable food for invalids, especially in the treatment of typhoid fever and other disorders where it was imperative to sustain the patient, but it is also superior as a food for infants.

—M.D., Louisville, Ken.

JULY 16th, 1896.

Shall always recommend the **IMPERIAL GRANUM**.

—M.D., Brooklyn, N. Y.

JULY 17th, 1896.

I believe the **IMPERIAL GRANUM** to be most reliable, and that it is well adapted to nourish motherless infants, and most valuable when a food is needed in disease.

—M.D., Chicago, Ills.

JULY 20th, 1896.

Being perfectly aseptic **IMPERIAL GRANUM** protects the patient against invasion of bacilli through the medium of food and rapidly brings up the vital powers.

—M.D., Rochester, N. Y.

JULY 29th, 1896.

I have just had a case (a child) in which the **IMPERIAL GRANUM** proved to be the only food that could be retained.

—M.D., Fort Scott, Kansas.

JULY 29th, 1896.

I am a firm believer in **IMPERIAL GRANUM**, knowing it to save the lives of many children when they otherwise would surely have died.

—M.D., Philadelphia Penna.

JULY 30th, 1896.

My wife used the **IMPERIAL GRANUM** during her confinement, and it also proved a perfect nourishment for the little one.

—M.D., Boston, Mass.

AUGUST 7th, 1896.

The **IMPERIAL GRANUM** still continues to be one of the best of foods.

—M.D., Newark, N. J.

AUGUST 7th, 1896.

I am an appreciative well wisher to **IMPERIAL GRANUM**.

—M.D., Chicago, Ills.

AUGUST 8th, 1896.

It is by far the best, and once used, indispensable.

—M.D., Colliers, Pa.

AUGUST 11th, 1896.

**IMPERIAL GRANUM** is no new thing to me for I have prescribed it for some time.

—M.D., Bethel, Conn.

AUGUST 17th, 1896.

I believe **IMPERIAL GRANUM** to be the best prepared food on the market.

—M.D., Chicago, Ills.

AUGUST 24th, 1896.

I recommend the **IMPERIAL GRANUM** to my infant and invalid patients because I have tested it in many cases with excellent results.

—M.D., Philadelphia, Pa.

AUGUST 24th, 1896.

I always prescribe the **IMPERIAL GRANUM**, none better.

—M.D., Mattawan, Mich.

AUGUST 27th, 1896.

**IMPERIAL GRANUM** IS MY SHEET ANCHOR IN TYPHOID FEVER!

—M.D., Erie, Pa.

AUGUST 28th, 1896.

I have used **IMPERIAL GRANUM** in my practice for over twenty years.

—M.D., Pottsville, Pa.

AUGUST 31st, 1896.

I have found **IMPERIAL GRANUM** all that you claim for it.

—M.D., Memphis, Tenn.

AUGUST 31st, 1896.

I often use **IMPERIAL GRANUM** and have found it very satisfactory.

—M.D., Boston, Mass.

SEPTEMBER 2d, 1896.

I have had opportunity this summer of making quite an extensive use of **IMPERIAL GRANUM** and the trial has been very satisfactory.

—M.D., Gallipolis, Ohio.

SEPTEMBER 5th, 1896.

I have prescribed the **IMPERIAL GRANUM** a great deal and am pleased with the results.

—M.D., New York City.

SEPTEMBER 5th, 1896.

I have relied on **IMPERIAL GRANUM** almost entirely for the artificial feeding of infants. Two of my own children have been brought up on it, and my baby is now using it.

—M.D., Chicago, Ills.

SEPTEMBER 5th, 1896.

I have prescribed **IMPERIAL GRANUM** a great deal and have been pleased with the results.

—M.D., New York City.

SEPTEMBER 8th, 1896.

I am fully aware of the virtues of the **IMPERIAL GRANUM**.

—M.D., Connellsville, Pa.

SEPTEMBER 8th, 1896.

Unlike other foods that I have prescribed I have *never* had scurvy or any other bad results from its long continued use. It is a most satisfactory food for infants and children.

—M.D., St. Louis, Mo.

SEPTEMBER 9th, 1896.

I have tried the **IMPERIAL GRANUM** in my practice and it has given satisfaction.

—M.D., Manning, S. C.

SEPTEMBER 14th, 1896.

I am a constant user of your food and regard it very favorably.

—M.D., Rutland, Vt.

SEPTEMBER 14th, 1896.

I have tried the **IMPERIAL GRANUM** with children and it helped the little ones wonderfully. They seemed to pick up at once.

—M.D., London, Ontario.

SEPTEMBER 14th, 1896.

I have used **IMPERIAL GRANUM** in my practice for a number of years and think a great deal of it.

—M.D., Brisben, N. Y.

SEPTEMBER 15th, 1896.

I have great faith in the **IMPERIAL GRANUM**.

—M.D., Chelsea, Vt.

SEPTEMBER 20th, 1896.

The **IMPERIAL GRANUM** has proved to be all that is claimed for it.

—M.D., Trading Post, Kansas.

SEPTEMBER 21st, 1896.

I have long been familiar with the **IMPERIAL GRANUM** and have prescribed it with good results.

—M.D., Sykesville, Md.

SEPTEMBER 28th, 1896.

I use the **IMPERIAL GRANUM** myself when not feeling quite up to the standard.

—M.D., Cleveland, Ohio.

SEPTEMBER 29th, 1896.

I have used the **IMPERIAL GRANUM** for many years and have found it a most useful diet for infants and invalids.

—M.D., Detroit, Mich.

SEPTEMBER 29th, 1896.

I have recently had occasion to use the **IMPERIAL GRANUM** in a very severe case of typhus and with perfect satisfaction.

—M.D., St. Louis, Mo.

# Lycetol-Bayer Gout Water

**For the treatment of  
Gouty Affections,  
Renal Calculus,  
Chronic Rheumatism,  
and the  
Uric Acid Diathesis.**

In view of the favorable reports concerning the action of Lycetol-Bayer in the treatment of the above-mentioned diseases, we have decided to offer this valuable preparation to the medical profession in form of an Alkaline Carbonated Mineral Water, put up in bottles of 24 ozs., each bottle containing 1.0 Gm. (15 grains) Lycetol-Bayer.

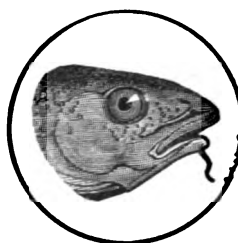
Lycetol is extremely pleasant to the taste, well borne by the stomach, and suitable for administration in chronic cases. In the treatment of lithæmia, renal calculus, gout and chronic rheumatism, Lycetol has been found a prompt, efficient and safe solvent and eliminant of uric acid and its deposits.

Owing to the recognized value of alkaline mineral waters in the treatment of diseases dependent upon the uric acid diathesis, it is believed that by the employment of Lycetol in the above form its efficiency is greatly enhanced, while it will also be found very agreeable and convenient of administration.

*Lycetol is a Product of the Farbenfabriken vorm.  
Friedr. Bayer & Co., Elberfeld.*

Pamphlets  
mailed on  
application.

**Schieffelin & Co., New York.**



**Needs no  
disguise,**

Because it is free  
from all disagreeable  
taste and odor.....

## PETER MÖLLER'S COD LIVER OIL

always of the highest standard of quality, is now prepared by a new process, the result of years of scientific investigation, whereby the Oil is kept from atmospheric contact from the beginning of the process of manufacture until it is safely corked up in bottles, thus preventing contamination of any kind and excluding all impurities.

Give this new Oil a trial. Ask for Peter Möller's Oil and see that the bottle—a flat, oval one—bears our name as agents. Notice the date in perforated letters at bottom of the label. We shall be glad to forward specimens of this

### Möller's Hydroxyl-Free Oil

to members of the medical profession, either for chemical investigation or practical "exhibition," and we shall also be glad to supply full information regarding Möller's New Process.

**Schieffelin & Co., New York.**

PRICE OF

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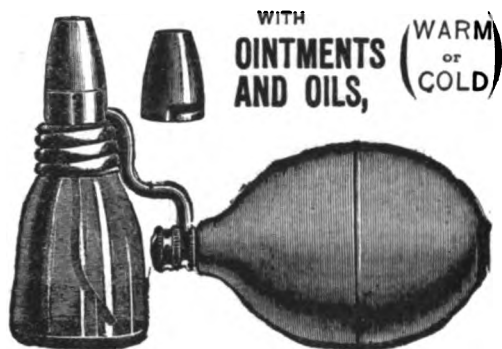
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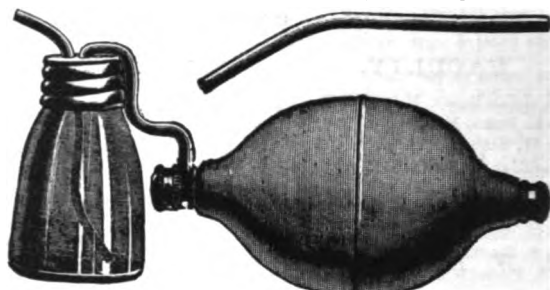
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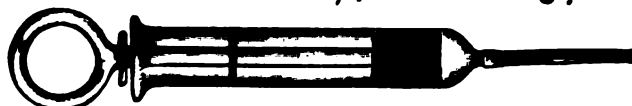
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## NEUROSES OF THE LARYNX

In a "Note on Codeine," in the *Lancet*, Dr. James Braithwaite, of Leeds, says: "Codeine seems to have a special action upon the nerves of the larynx; hence it relieves a tickling cough better than any ordinary form of opium. One-half of a grain may be given half an hour before bedtime. It was in my own case that I first began to use codeine. For more than twenty years, usually once every winter, I have been seized with a spasmodic cough just before going to sleep, which becomes so severe that I am compelled to get up and sit by the fire. After an hour or two I return to bed and am free from the cough till the next winter. In other respects I enjoy good health. Many years ago I found that one-half grain of codeine, taken about two hours before bedtime, absolutely stops the attack and leaves no unpleasant effect the next morning. In cases of vomiting from almost any cause, one-quarter grain doses of codeine usually answer exceedingly well. In the milder forms of diarrhoea one-half to one grain of the drug usually answers most satisfactorily, and there are no unpleasant after-effects."

We find, however, that where there is great pain, the analgesic effect of codeine may not be sufficient, and a combination with antikamnia is required. It is best given in the form of a tablet, the proportions being  $4\frac{1}{4}$  grains antikamnia and  $\frac{1}{4}$  grain codeine. Sometimes chronic neuroses may be cured by breaking the continuity of the pain, for which purpose we have found this combination peculiarly suited.

Clinical reports in great numbers are being received from many sections of this country, which, while verifying Dr. Braithwaite's observations as to the value of codeine, place even a more exalted value upon the advisability of always combining it with antikamnia in treatment of any neuroses of the larynx, coughs, bronchial affections, excessive vomiting, milder forms of diarrhoea, as well as chronic neuroses; the therapeutical value of both being enhanced by combination. The tablets of "Antikamnia and Codeine, containing  $4\frac{1}{4}$  grains antikamnia and  $\frac{1}{4}$  grain codeine, meet the indications almost universally.

—The *Laryngoscope*.

## HOW TO TREAT A COUGH.

In an able article under the above heading in the *New York Medical Journal*, Edwin Geer, M.D., Physician in charge of the City Hospital Dispensary; also Physician in Chief, Outdoor Department, Maryland Maternity Hospital, Baltimore, writes:—

"The object of this brief paper is not to try to teach my colleagues how to treat a cough, but simply to state how I do it, what good results I get, and to call their attention to those lighter affections of the throat and chest, the principal symptom of which is an annoying cough, for which alone we are often consulted. The patient may fear an approaching pneumonia, or be anxious because of a bad family history, or the cough may cause loss of sleep and detention from business. What shall we do for these coughs? It has been my custom for some time to treat each of the conditions after this general plan: If constipation is present, which is generally the case, I find that small doses of calomel and soda open the bowels freely, and if they do not I follow them with a saline purgative; then I give the following:

R. Antikamnia and codeine tablets, No. xxx.

Sig.: One tablet once every four hours.

"The above tablet contains four grains and three-quarters of antikamnia and a quarter of a grain of sulphate of codeine, and is given for the following reasons: The antikamnia has a marked influence over any febrile action, restores natural activity to the skin, and effectually controls any nervous element which may be in the case. The action of the codeine is equally beneficial, and in some respects enforces the action of its associate. The physiological action of codeine is known to be peculiar, in that it does not arrest secretion in the respiratory or intestinal tract, while it has marked power to control inflammation and irritation. It is not to be compared with morphine, which increases the dryness of the throat, thus often aggravating the condition, while its constipating effect is especially undesirable."



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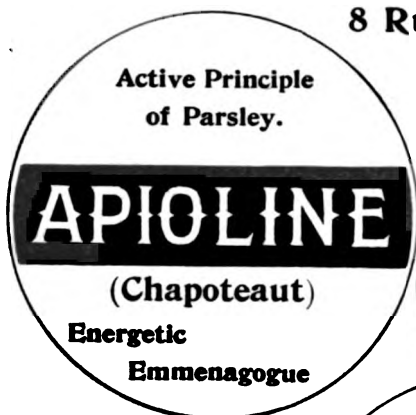
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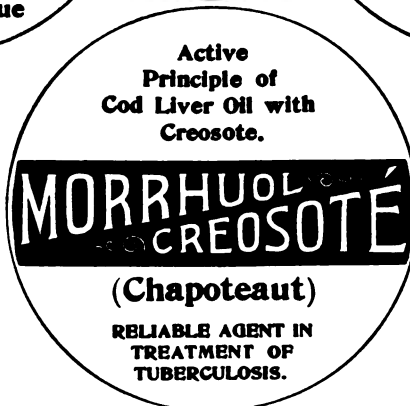


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Professor BROWN-SÉQUARD, at a meeting of the Paris Society of Biology, October 15, 1887, said: "Laville's well-known remedy acts marvellously well in Gout, in witness of which I cite the following circumstance which occurred under my own observation: Dr. Fleury, of the French Faculty, and also author of several works on hydrotherapy, had an attack of complete paralysis of the right side, with anesthesia and aphasia. Precursory symptoms having appeared on the night before, he directed that in case he would be unable to read or write, a large dose of *Liqueur de Laville* should be given to him, provided I saw no objection to it. I assented. Two hours afterward all symptoms of paralysis had disappeared."

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Phosphates being a NATURAL FOOD PRODUCT no Substitute can do their work.

**DOSE.**—For an adult, one tablespoonful three times a day, after eating; from seven to twelve years of age, one dessertspoonful; from two to seven, one teaspoonful; for infants, from five to twenty drops according to age.

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In Southern Practitioner, Sept., 1896.

# Nerve Tonic Properties of Buffalo Lithia Water

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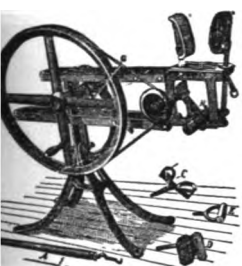
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HOWARD MILLET DRUG CO., Augusta, Ga.  
G. W. AIMFR & CO., Charleston, S. C.  
W. C. FISHER, Columbia, S. C.  
BURWALL & DUNN, Charlotte, N. C.  
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